# FAIRFIELD UNIVERSITY

## BEI SCHOOL OF ENGINEERING

1994-1995

*The Jesuit University of Southern New England*

## Applications and Information

For applications and additional information, please write or call:

**BEI School of Engineering**

McAuliffe Hall
Fairfield University
Fairfield, CT 06430-7524
Telephone: (203) 255-2623

Fairfield University admits students of any sex, race, color, marital status, sexual orientation, religion, age, national origin or ancestry, disability or handicap to all the rights, privileges, programs and activities generally accorded or made available to students of the University. It does not discriminate on the basis of sex, race, color, marital status, sexual orientation, religion, age, national origin or ancestry, disability or handicap in administration of its educational policies, admission policies, employment policies, scholarship and loan programs, athletic programs or other University-administered programs.

# BEI SCHOOL OF ENGINEERING OF FAIRFIELD UNIVERSITY

Bachelor of Science

in

Electrical Engineering
Information Systems Engineering
Mechanical Engineering
Manufacturing Engineering

and

Associate in Engineering

*Welcome!*

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# The Mission of Fairfield University

Fairfield University, founded by the Society of Jesus, is a coeducational institution of higher learning whose primary objectives are to develop the creative intellectual potential of its students and to foster in them ethical and religious values and a sense of social responsibility. Jesuit Education, which began in 1547, is committed today to the service of faith, of which the promotion of justice is an absolute requirement.

Fairfield is Catholic in both tradition and spirit. It celebrates the God-given dignity of every human person. As a Catholic university it welcomes those of all beliefs and traditions who share its concerns for scholarship, justice, truth, and freedom, and it values the diversity which their membership brings to the university community.

Fairfield educates its students through a variety of scholarly and professional disciplines. All of its schools share a liberal and humanistic perspective and a commitment to excellence. Fairfield encourages a respect for all the disciplines — their similarities, their differences, and their interrelationships. In particular, in its undergraduate schools it provides all students with a broadly based general education curriculum with a special emphasis on the traditional humanities as a complement to the more specialized preparation in disciplines and professions provided by the major programs. Fairfield is also committed to the needs of society for liberally educated professionals. It meets the needs of its students to assume positions in this society through its undergraduate and graduate professional schools and programs.

A Fairfield education is a liberal education, characterized by its breadth and depth. It offers opportunities for individual and common reflection, and it provides training in such essential human skills as analysis, synthesis, and communication. The liberally educated person is able to assimilate and organize facts, to evaluate knowledge, to identify issues, to use appropriate methods of reasoning, and to convey conclusions persuasively in written and spoken word. Equally essential to liberal education is the development of the aesthetic dimension of human nature, the power to imagine, to intuit, to create, and to appreciate. In its fullest sense liberal education initiates students at a mature level into their culture, its past, its present, and its future.

Fairfield recognizes that learning is a lifelong process and sees the education which it provides as a foundation upon which its students may continue to build within their chosen areas of scholarly study or professional development. It also seeks to foster in its students a continuing intellectual curiosity and a desire for self-education which will extend to the broad range of areas to which they have been introduced in their studies.

As a community of scholars, Fairfield gladly joins in the broader task of expanding human knowledge and deepening human understanding, and to this end it encourages and supports the scholarly research and artistic production of its faculty and students.

Fairfield has a further obligation to the wider community of which it is a part, to share with its neighbors its resources and its special expertise for the betterment of the community as a whole. Faculty and students are encouraged to participate in the larger community through service and academic activities. But most of all, Fairfield serves the wider community by educating its students to be socially aware and morally responsible persons.

Fairfield University values each of its students as an individual with unique abilities and potentials, and it respects the personal and academic freedom of all its members. At the same time it seeks to develop a greater sense of community within itself, a sense that all of its members belong to and are involved in the University, sharing common goals and a common commitment to truth and justice, and manifesting in their lives the common concern for others which is the obligation of all educated, mature human beings.

# The University

Fairfield University, founded in 1942, became the 26th institution of higher learning operated by the Jesuit Order in the United States — the inheritor of a tradition of learning and scholarship that dates back to 1540, when St. Ignatius Loyola founded the Society of Jesus on the principle of active service in the world.

Many Jesuits chose education as their field of service. A basic Jesuit principle, the striving for excellence, led them to create schools that have become renowned for their academic quality. Over the centuries, a Jesuit education has come to mean a high standard of academic and intellectual discipline within Judeo-Christian values.

The majority of Fairfield's faculty are lay people who represent many faiths and many creeds, and students are selected without regard to sex, race, color, marital status, religion, age, national origin or ancestry, disability or handicap. There is one common tie — a commitment to moral and spiritual values. This is the cornerstone of Fairfield's academic philosophy — the search for truth through learning.

Fairfield University comprises the College of Arts and Sciences, the School of Business, the School of Nursing, the Graduate School of Education and Allied Professions, the School of Continuing Education and the BEI School of Engineering.

**Located in America's "academic corridor,"** — that short expanse from New York City to Boston that contains the world's largest concentration of colleges and universities — Fairfield provides access to many cultural, recreational, social and intellectual programs. In addition to its proximity to New York City and all the recreational possibilities available there, the immediate area offers many fine local theaters and cinemas, restaurants, botanical and zoological gardens, and many excellent beaches and boating facilities.

**Fairfield's 225-acre campus** is among the most beautiful in the country. Created from two large private estates, it retains a gracious, tranquil atmosphere. There are many wooded areas, lawns, gardens and pleasant walks, and, from several vantage points, a broad view of the blue waters of Long Island Sound.

All of the University's buildings are modern and well-suited to the needs of its students. Some of the outstanding buildings are the Bannow Science Center; the Nyselius Library; the Recreational Complex; Donnarumma Hall; Canisius Hall; the Regina A. Quick Center for the Arts, with a 730-seat theater, a smaller experimental theater, and art gallery; and the Egan Chapel of St. Ignatius Loyola.

# Accreditation

Fairfield University is fully accredited by the New England Association of Schools and Colleges, which accredits schools and colleges in the six New England States. Accreditation by one of the six regional accrediting associations in the United States indicates that the school or college has been carefully evaluated and found to meet standards agreed upon by qualified educators.

The State of Connecticut Department of Education has approved the programs for teacher certification at the secondary level and graduate programs leading to certification in specialized areas of education in the Graduate School of Education and Allied Professions. In addition, its School and Community Counseling programs have received accreditation from the Council for Accreditation of Counseling and Related Educational Programs (CACREP), a specialized accrediting body recognized by the Council on Recognition of Postsecondary Accreditation (COPA).

The School of Nursing has been accredited by the National League for Nursing and approved by the Connecticut Department of Higher Education and by the Connecticut State Board of Examiners for Nursing.

In October 1980, the State of Connecticut Department of Higher Education granted licensure for the Master of Science in Financial Management program. In February 1983, the State of Connecticut Department of Higher Education granted full accreditation for the Master of Science in Financial Management program.

On August 1, 1994, Fairfield University merged with Bridgeport Engineering Institute, BEI, to form the BEI School of Engineering of Fairfield University. BEI was founded in 1924 and was licensed by the Connecticut Department of Higher Education in 1959 to grant the Associate in Engineering degree; in 1963 to grant the Bachelor of Science degrees in Electrical and Mechanical Engineering; and in 1992 the Bachelor of Science degree in Information Systems Engineering.

The University holds memberships in the National Association of Independent Colleges and Universities, American Council for Higher Education, American Assembly of Collegiate Schools of Business, American Association of Colleges for Teacher Education, American Council on Education, American Society for Engineering Education, Association of Jesuit Colleges and Universities, Connecticut Association of Colleges and Universities for Teacher Education, Connecticut Conference of Independent Colleges, Connecticut Council for Higher Education, National Catholic Educational Association, National League for Nursing, and New England Business and Economic Association.

Fairfield University complies with the Family Educational Rights and Privacy Act of 1974 (also known as the Buckley Amendment) which defines the rights and protects the privacy of students with regard to their educational records.

This catalogue contains specific information for the evening engineering programs at Fairfield University. It will be useful as a source of continuing reference and should be saved by the student.

The provisions of this catalogue are not to be regarded as an irrevocable contract between Fairfield University and the student. The University reserves the right to change any provision or any requirement at any time.

# General Information

## Transcripts

Transcript requests should be made in writing to the University Registrar's Office in Canisius Hall. There is a $4 fee for each copy. Students should indicate the program and dates that they attended. In accordance with the general practices of colleges and universities, official transcripts with the University Seal are sent directly by the University. Requests should be made one week in advance of the date they are needed. Requests are not processed during examination and registration periods.

## Refund of Tuition

All requests for tuition refunds must be submitted to the appropriate Dean's office immediately after the withdrawal from class. (Fees are not refundable.) The request must be in writing and all refunds will be made based on the date notice is received or, if mailed, on the postmarked date according to the following schedule. Refunds of tuition charged on either a MasterCard, VISA, or American Express must be applied as a credit to your charge card account.

| | Amount Refundable |
|---|---|
| Before first scheduled class | 100% |
| Before second scheduled class | 90% |
| Before third scheduled class | 80% |
| Before fourth scheduled class | 60% |
| Before fifth scheduled class | 40% |
| Before sixth scheduled class | 20% |
| After sixth scheduled class | 0 |

**Refund takes 4-6 weeks to process.**

Note: If federal or state financial aid is utilized, the refund amount may be less than the above percentages.

## Withdrawal

Students who wish to withdraw from a single course, all courses, or the School must submit a written statement of their intention to the appropriate Dean for his or her approval. Failure to attend class or merely giving notice to an instructor does not constitute an official withdrawal and may result in a penalty grade(s) being recorded for the course(s). In general, course withdrawals are not approved after the sixth scheduled class. Exceptions may be approved by the Dean in extreme cases.

## University Course Numbering System

**Undergraduate**

| | |
|---|---|
| 01-99 | Introductory courses |
| 100-199 | Intermediate courses without prerequisites |
| 200-299 | Intermediate courses with prerequisites |
| 300-399 | Advanced courses, normally limited to juniors and seniors and open to graduate students with permission |

**Graduate**

| | |
|---|---|
| 400-499 | Graduate courses, open to undergraduate students with permission |
| 500-599 | Graduate courses |

# Financial Aid

There are a number of types of financial aid available. None discriminate on the basis or race, religion, color, sex or national origin and all students are urged to review the list to see which will fill a need; counseling in this area is available through the financial aid office.

Following is an outline of the various programs, all of which require that a student be making satisfactory academic progress, and the application procedure for each.

## Need based programs

These are government sponsored programs available to students whose educational expenses (determined from standardized student budgets, modified if appropriate) exceed their expected family contribution to an education (determined from one of two federally approved formulae which consider both income and assests).

## Pell Grant

This is a federally sponsored program awarding grants (no repayment) of up to $2300 per year depending on need and the number of credits taken. To qualify, a student must be taking at least 6 credits, must not have a previous baccalaureate degree, must be a U.S. citizen or an eligible non-citizen, must not be in arrears on any federal educational loans and must be registered with selective service if required to be. In general, Pell Grants are limited to 5 years of study.

While it will not be posted until later in a term, a firm commitment for Pell grants, *based on a particular course load*, will be made after receipt of a Student Aid Report by the Financial Aid office. These reports will be sent to students by the Department of Education after FAF's or FAFSA's are filed. All Pell grants are applied to a student's tuition account, with any overpayment (resulting from prior tuition payments by the student) being refunded to the student.

To apply, fill out a Financial Aid Form (FAF) for the 94/95 school year or a Free Application for Federal Student Aid (FAFSA) for the 94/95 school year; check question 3 on the form "yes", and submit it to the College Scholarship Service, Princeton, NJ in the envelope provided — *not* to the University. Also fill out a BEI Scholarship and Aid Application (SAA) and send it, together with a copy of your federal tax return — 1993 for the 94/95 school year — to the BEI Office. All forms are available at the Registrar's Office.

## Connecticut Independent College Student Grant (CICS)

This is a state sponsored program which can award up to $6,380 per year to students who are Connecticut residents, have no baccalaureate degree and demonstrate need. These awards are also grants and need not be repaid. Formulae for both educational cost and family contribution differ from those used in Pell, so a student may well qualify for one but not the other. Any Pell Grant or employer tuition reimbursement are deducted from "need" prior to determination of CICS eligibility.

CICS grants are normally not determined until the final month of a term, at which time the student is advised of any award. If the student still owes tuition, the amount is retained by the University any excess is sent to the student by check. If additional tuition is due, the student must pay it prior to finals.

To apply, submit an FAF or FAFSA, an SAA and a copy of your federal tax return as outline above.

## Stafford Loans (formerly Guaranteed Student Loans)

These are low cost loans made by a bank but guaranteed and underwritten by the federal government, which may be up to $2,625 annually for students with fewer than 67 credits or $4,000 annually for students with 67 or more total credits, to a maximum indebtedness of $17,250. Interest is not charged nor must repayment begin until 6 months after a student graduates, leaves college, or takes fewer than 6 credits per term.

Requirements are generally the same as for Pell Grants, but any employer reimbursement, Pell Grant or CICS Grant must be used to reduce need before a Stafford Loan is approved.

Certification of Stafford loans is also normally withheld until late in a term. When these loans are disbursed, the University will expect any tuition owed to be paid from the proceeds, with any excess being paid to the student.

To apply for a Stafford loan, submit an FAF or FAFSA, SAA and 1040 as for Pell and, also obtain a loan form from your bank or the Financial Aid Offices. Before a loan will be approved, you must also meet with a financial aid advisor who will discuss details and responsibilities of such a loan with you.

## Non-need Base Programs

These programs do not require demonstration of need, although in the case of scholarships, this may be a consideration.

## PLUS Loans and Supplemental Loans for Students (SLS)

PLUS loans are for parent borrowers and SLS's are for students. They differ from Stafford Loan's in that (1) no need must be shown, (2) the annual maximum is $4,000 regardless of school year to a total of $20,000, (3) interest is slightly higher than Stafford Loans, and (4) the borrowers will be charged interest within 60 days of the loan — principal repayment is the same as Stafford Loans. Most banks will also permit interest to accumulate and be added to the principal.

*Perkin-Elmer Scholarship Awards*

Application forms must be obtained from a bank and both an FAF or FAFSA and the BEI-SAS form must be completed. No 1040's are necessary, although a meeting with a financial aid advisor is required. The amount loaned may not exceed a student's cost of education less any amounts possible from Pell, Stafford or CICSG programs. Disbursement practices are similar to those for Stafford loans.

### Scholarships

See information on page 20.

### Reimbursement by Employer

Many corporations, school systems and hospitals have a tuition reimbursement plan for their employees. Students should check their company policies and procedures which apply to degree studies.

### Tax Deductions

Treasury regulation (1.162.5) permits an income tax deduction for educational expenses (registration fees and cost of travel, meals and lodging) undertaken to: (1) maintain or improve skills required in one's employment or other trade or business, or (2) meet express requirements of an employer or a law imposed as a condition to retention of employment job status or rate of compensation.

### Veterans

Veterans may apply educational benefits to degree studies pursued at Fairfield University. Veterans should submit their file numbers at the time of registration. The University Registrar's office will complete and submit the certification form.

## Library

The Nyselius Library contains more than 255,000 carefully selected bound volumes, the equivalent of 58,000 volumes in microform, and 1,800 journals and newspapers. A media resources department provides convenient use of audio-visual and other non-print materials, and supervises a microcomputer lab. The reference department offers interlibrary loan and on-line and CD-ROM bibliographic search services. The stacks are open to all students and there is study space, primarily at individual carrels, for more than 600 students. For the convenience of the campus community, the library is open more than 104 hours a week except during vacation periods.

Because the library has an automated circulation system, students must obtain barcode labels for their University identification cards at the circulation desk before they can borrow materials.

## Campus Ministry

The Campus Ministry Team is composed of four Jesuit priests, a religious sister, a laywoman, and a Protestant minister. The members of the ministry team provide counseling and spiritual direction, foster prayer life, coordinate interfaith and ecumenical religious events, conduct liturgies and retreats, and encourage student-led ministries and participation in community service and international mission opportunities. The ministers are available at any time for students's needs and can be reached at the Pedro Arrupe, S.J. Campus Ministry Center or in their residence hall suites.

## Housing

University residence hall facilities on campus are reserved for undergraduates. Off-campus housing for students can be arranged on an individual basis through the coordinator of off-campus housing, Loyola Hall.

# Academic Grievance

The purpose of procedures for review of academic grievances is to protect the rights of students, faculty, and the University by providing mechanisms for equitable problem-solving.

A "grievance" is defined as a complaint of unfair treatment for which a specific remedy is sought. It excludes circumstances which may give rise to a complaint for which explicit redress is neither called for nor sought, or for which other structures within the University serve as an agency for resolution.

Academic grievances either relate to procedural appeals or to academic competence appeals.

Procedural appeals are defined as those seeking a remedy where no issue of the quality of the student's work is involved. For example, a student might contend that the professor failed to follow previously announced mechanisms of evaluation.

Academic competence appeals are defined as those seeking a remedy because the evaluation of the quality of a student's work in a course is disputed.

"Remedies" would include but not be limited to awarded grade changes, such as permission to take make-up examinations or to repeat courses without penalty.

The procedures defined here must be initiated within a reasonable period (usually a semester) after the event which is the subject of the grievance.

### *Informal Procedure*

*Step one:* The student attempts to resolve any academic grievance with the faculty member, Department Chair, or other individual or agency involved. If, following this initial attempt at resolution, the student remains convinced that a grievance exists, she/he advances to step two.

*Step two:* The student consults the Chair, or other individuals when appropriate, bringing written documentation of the process up to this point. If the student continues to assert that a grievance exists after attempted reconciliation, she/he advances to step three.

*Step three:* The student presents the grievance to the Dean of the involved school, bringing to this meeting documentation of steps one and two. If the Dean's attempts at mediation prove unsuccessful, the student is informed of the right to initiate formal review procedure.

### *Formal Procedure*

*Step one:* If the student still believes that the grievance remains unresolved following these informal procedures, she/he initiates the formal review procedure by making a written request for a formal hearing through the Dean to the Academic Vice President. Such a request should define the grievance and be accompanied by documentation of completion of the informal process. It should also be accompanied by the Dean's opinion of the grievance.

*Step two:* The Academic Vice President determines whether the grievance merits further attention. If not, the student is so informed. If so, the Academic Vice President determines whether it is a procedural or competence appeal. If it relates to a procedural matter, she/he selects a Dean (other than the Dean of the involved school) to chair a Grievance Committee.

If it relates to an academic competence matter, the Academic Vice President requests from the Dean involved the name of two outside experts to serve as a consultant panel in determining the merit of the student's grievance.

*Step three:* For procedural appeals, the Grievance Committee takes whatever steps are deemed appropriate to render a recommendation for resolving the grievance. The Committee adheres to due process procedures analogous to those in the Faculty Handbook.

For competence appeals, the Academic Vice President contacts the outside panel members and requests that they review the case in relation to its content validity.

*Step four:* The recommendation from either the Grievance Committee or the panel is forwarded to the Academic Vice President in written form, accompanied, if necessary, by any supporting data that formed the basis of the recommendation.

*Step five:* The Academic Vice President renders a final and binding judgment, notifying all involved parties. If the grievance involves a dispute over a course grade given by a faculty member, the Academic Vice President is the only University official empowered to change that grade, and then only at the recommendation of the committee or panel.

## The Barone Campus Center

The Barone Campus Center is the social focal point for all sectors of the University community. The Center is open weekdays and Fridays from 8 a.m. to midnight; Saturdays and Sundays from 8 a.m. to 11 p.m.

Included in the Barone Campus Center facilities are: the bookstore (open Monday-Friday, 9 a.m.-4:30 p.m., telephone 259-2324), game room, mail room (open Monday-Friday, 9:30 a.m.-3:45 p.m.), ride boards, weekly activities bulletin, and the Stag-Her Inn (Snack Bar open Monday-Friday, 8 a.m.-midnight; Saturday and Sunday, noon-11 p.m.). For more information, call the Barone Campus Center Information Desk from 9 a.m. to 9 p.m., (203) 254-4222, or ext. 4222.

## Recreational Complex

The Recreational Complex is a multi-purpose facility with a 25-meter swimming pool; a fieldhouse unit that can be used interchangeably for badminton, volleyball, tennis, basketball and jogging; enclosed courts that can be used for handball and racquetball; two exercise rooms; a multi-purpose room that can be used for modern dance, slimnastics and exercising; two saunas and a whirlpool bath; a sunbathing deck; and locker rooms.

Evening part-time students are eligible to join during each semester they are enrolled upon presentation of a University identification card validated for the current semester. Membership fee information is available at the Recreational Complex. The office is open from 10 a.m. to 5:30 p.m., Monday through Friday. For complete information, call (203) 254-4140, during office hours.

## Special Events

A continuous series of special events including exhibitions, lectures, and dramatic and musical programs is scheduled throughout the academic year. These events are open to all members of the University community, and many of them are free. For a complete calendar of events contact the Barone Campus Center, ext. 4222.

## Security

The Security Department is responsible for the safety and security of persons and property associated with Fairfield University. The office is open, and security officers are on patrol, 24 hours a day year-round. Violations of University regulations which require immediate attention should be reported to the Security Department.

The Security office is located in Room 2 on the ground floor of Loyola Hall. To reach the department from an outside telephone line, dial 254-4090; from an inside line, dial extension 4090. **In an emergency, dial 254-4090.**

## Parking

All vehicles must display a valid parking permit and park properly in the designated area. Parking permits may be obtained at the Security Department, Room 2, Loyola Hall. **A valid University identification card or receipt of registration and a motor vehicle registration must be presented when registering a motor vehicle.**

Unauthorized vehicles in handicapped, fire lane or service vehicle spaces will be towed at the owner's expense. A number of parking spaces have been designated for handicapped persons throughout the campus. Vehicles of handicapped persons displaying a current permit either from the state in which they reside or a University permit may park in these areas. A pamphlet detailing traffic and parking regulations is available at Security.

# The BEI School of Engineering Calendar 1994-95

Classes are offered primarily on Monday, Tuesday, Wednesday and Thursday evenings to accommodate those in the program employed full-time. A few classes are offered Friday evenings and Saturday mornings.

## Fall Semester 1994 (First Semester)

| | |
|---|---|
| September 1 | Convocation for entering students |
| September 2 | Registration deadline (by mail) |
| September 7 | Wednesday classes begin |
| September 8 | Thursday classes begin |
| September 12 | Monday classes begin |
| September 13 | Tuesday classes begin |
| October 10 | Columbus Day, BEI Monday classes continue |
| October 21 | Degree cards due for January graduation |
| November 23 - November 27 | Thanksgiving Recess |
| December 19 | Monday classes end, Final Exams |
| December 20 | Tuesday classes end, Final Exams |
| December 21 | Wednesday classes end, Final Exams |
| December 22 | Thursday classes end, Final Exams |

## Spring Semester 1995 (Second Semester)

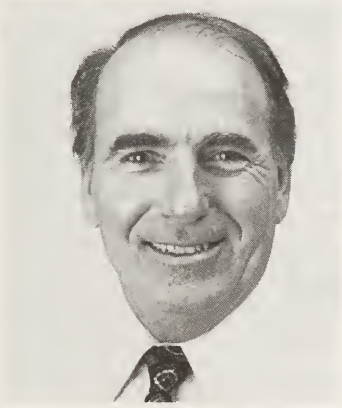
| | |
|---|---|
| January 13 | Registration deadline (by mail) |
| January 16 | Martin Luther King Jr. Day, University holiday |
| January 17 | Tuesday classes begin |
| January 18 | Wednesday classes begin |
| January 19 | Thursday classes begin |
| January 23 | Monday classes begin |
| February 10 | Deadline for application to May Commencement |
| February 10 | Degree cards due for May graduation |
| April 14-16 | Easter Recess |
| April 25 | Tuesday classes end |
| April 26 | Wednesday classes end |
| April 27 | Thursday classes end |
| May 1 | Monday classes end |
| May 21 | University Commencement |

## Summer Semester 1995 (Third Semester)

| | |
|---|---|
| May 4 | Convocation for new students |
| May 9 | Classes begin, 7 1/2 week and 10 week sessions |
| May 29 | Memorial Day, no classes |
| June 16 | Degree cards due for August graduation |
| June 27, July 5 | Final Exams, 7 1/2 week session |
| July 4 | Tuesday, Independence Day, no classes |
| July 12, 13, 17, 19 | Final Exams, 10 week session |

# Welcome

*William M. Krummel, Ph.D. P.E.*
*Dean*



*Richard G. Weber, Ph.D. P.E.*
*Associate Dean*

**Welcome to BEI,** School of Engineering of Fairfield University, and congratulations on your decision to continue the development of your engineering career.

You have chosen a school that is devoted to serving the student who is fully employed, with responsibilities to family, community, and profession. BEI provides the opportunity to combine study, experience and professional practice, offering prospects for the best in engineering education. BEI engineering faculty and counselors are professionals active in the technology that energizes Southwest Connecticut's diverse industry.

Keep and use this catalogue as your basic guide and reference for your entire career here at BEI. We have designed this catalogue to serve several purposes. In addition to admissions, financial, and scholarship information, the catalogue contains your Student Handbook with grading practices, standards of student conduct and other important matters. Very important are the engineering degree requirements presented in three versions: a recommended course of study; a listing of required courses; and a flow chart. Study the requirements in planning your program and review your entire program with your counselor at least once a year. Be assured that you will have received fair and realistic transfer credits for the college level work you have completed elsewhere.

On behalf of the entire BEI family, I wish you success.

Cordially,

William M. Krummel
Dean

# The BEI School of Engineering

The BEI School of Engineering of Fairfield University is the continuation of the Bridgeport Engineering Institute founded in 1924 and in uninterrupted operation as an accredited independent college until merger with Fairfield University August 1, 1994.

The Mission of the BEI School of Engineering continues those objectives of Bridgeport Engineering Institute that are appropriate as a unit of Fairfield University.

## Mission

The BEI School of Engineering of Fairfield University offers the residents of Southwest Connecticut and nearby New York a quality education at the Associate, Baccalaureate and Graduate levels in Engineering and related technology fields in an evening/weekend format of instruction.

In support of this mission and to meet the needs of its students, their employers, and the community at large, the school is committed to:

- Provide the support services needed by non traditional students who are fully employed individuals.
- Maintain a close working relationship with industry in order to better understand their needs and identify new opportunities to serve them.
- Maintain a close relationship with practitioners of the engineering profession for assistance in program assessment and guidance in program development.
- Continually improve the quality and currency of the instructional program.
- Provide special non credit courses in engineering and related fields, particularly in emerging technologies, to graduate engineers, engineering managers and others who wish to advance their professional development.
- Provide excellence in the teaching staff by employing engineers and scientists who combine academic credentials with the stimuli of the innovative, dynamic environment of industrial professional practice in local industry, and a long time commitment to the school.

BEI was founded in 1924 as a non-profit institution offering quality instruction in engineering fundamentals to residents of Bridgeport and the Fairfield County region through evening study. All branches of engineering rest upon a common foundation of mathematics and science; in recognition of this fact, the courses at the school place heavy emphasis on the student's development in these fundamentals.

The School presents programs leading to the degrees of Bachelor of Science in Mechanical Engineering, Bachelor of Science in Electrical Engineering, Bachelor of Science in Information Systems Engineering, and a Manufacturing Engineering option in Mechanical Engineering. Courses required for the completion of these programs are presented in continuous and integrated sequences. This permits the student to complete the required work and selected elective subjects without loss of time but also at a pace which fits his/her personal academic needs.

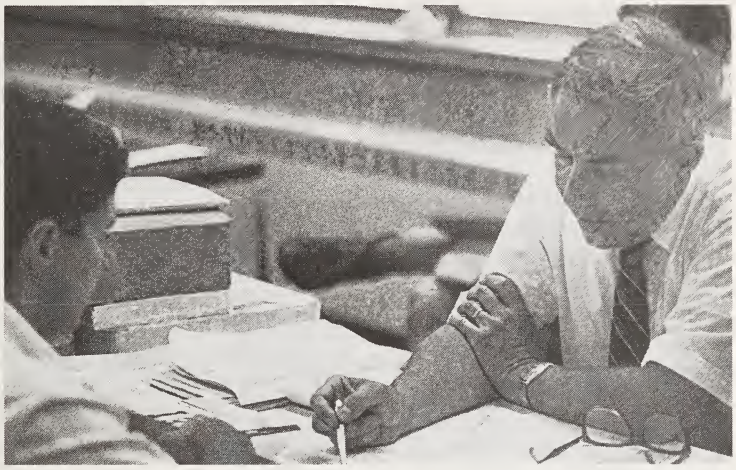
Programs are also presented leading to the degree of Associate in Engineering with options for the student's specialization in electrical or mechanical fields.

Class sections are kept small so that instructors will have adequate time to give each student individual attention.

# Some Frequently Asked Questions About BEI

**Q. How long will it take to earn a B.S. degree?**

**A**. Depending on how many courses you take each semester, and how many credits you transfer from previous college work, it could take less than two years to satisfy just the residency requirement for the B.S. For a student without any previous college work, but who is able to follow the recommended program of evening study, it will take 6 years for the B.S. degree. In a recent graduating class, the average was 6 to 7 years from time of BEI entry to graduation.



**Q. Do I have to take time off from work for counseling and resolving matters about tuition and financial aid?**

**A**. No. BEI maintains a full staff of counselors and admissions advisors in the evening from 6:30 PM to 9:00 PM Monday through Thursday. In addition to getting help with your program of study, you can pay your bills and get help applying for financial aid during evening hours. BEI keeps the office open and staffed until 10:00 PM just in case there might be an emergency call for you from home.

**Q. I haven't been in a classroom for several years, and I know I'm rusty in my Mathematics. Can I get help?**

**A**. Yes. At Admissions, we will give you a Math placement test to find out where you should start. Mathematics achievement is critical for success in an engineering program of study, so BEI provides three courses that are available to bring you from where you are now to the point where you can start Calculus. However, we don't think this is enough, so BEI provides free individual Math tutoring by appointment on selected evenings each week.

**Q. I am an older worker with a family and the responsibilities that go with a family. Will I feel out of place at BEI?**

**A**. No. The average age of the BEI student is around 30 and half are married and have children. BEI faculty and staff know full well the sacrifice and commitment that the BEI student is making in order to complete the work for a B.S. degree. Many of the faculty have gone the same route themselves. The faculty and staff are determined that high standards of quality will be maintained in the course work, but at the same time recognize the need for flexibility that will accommodate the fully employed student's individual needs.

**Q. I have been working as an engineering technician for several years. I think I may have trouble sitting through a lecture given by someone who has never worked in an engineering office or out in the field. What are the BEI faculty like?**

**A**. BEI is proud that most of the engineering faculty are practicing professionals. Most are senior engineers or engineering managers employed in local industry, and who also have a great desire to teach, to impart their professional experience and learning to the next generation of engineers. Many faculty have served over 20 years teaching at BEI, and at other institutions prior to coming to BEI.

# Educational Resources

The BEI School uses classroom and laboratory space at a number of locations.

The BEI main office, Dean and counselors are at McAuliffe Hall. Also at McAuliffe are laboratories for Mechanical Engineering, Manufacturing Engineering, Information Systems Engineering, and CAD. A Tutorial Center and a Reading and Reference Lounge are located at McAuliffe as well as three classrooms. Electrical Engineering, Physics, Chemistry and Computer Laboratories are located at the Bannow Science Center. The majority of BEI classrooms are situated in Xavier Hall.

For locations, refer to the campus map on the inside back cover of this catalogue.

The engineering reference and circulating collection is housed in the University's Nyselius Library. The Library continually cultivates its collection and services to support the School's curriculum as well as the overall intellectual development of its students.

Students residing in the Danbury area will be able to take BEI engineering courses on the campus of Western Connecticut Sate University for a very limited time. These students should be prepared to complete their degree programs on the Fairfield University campus.

# Admissions

## Admission Policy

BEI admits students without regard to race, color, sex, age, religion, national origin, or marital status. Women and minorities are particularly encouraged to apply and to prepare for a career in Engineering.

All applications are reviewed and evaluated on an individual basis.

Applicants must satisfy the admissions counselor that they possess the essential qualifications necessary for study in Engineering.

Applicants for admission who have not completed any college work should be graduates of an accredited secondary school, or should have passed the State High School Equivalency examination, or received a General Equivalency Diploma (GED). For acceptance into the Associate in Engineering degree program, the secondary work should include successful completion of 4 units (one unit is one year) in English, and 1 unit in Algebra. For acceptance into the Bachelor of Science degree program, the English requirement is the same, but a minimum of three units of Mathematics, including Algebra. Geometry, and Trigonometry, or equivalent college level Mathematics is required. In addition, a working knowledge of a computer language is required of all B.S. entrants. This can be obtained in secondary school, equivalent college level course at BEI or elsewhere, or can be demonstrated through examination. Preparation in Chemistry and Physics is strongly recommended.

Deficiencies may be satisfied by completing courses in the BEI Preparatory Program. Satisfactory placement as determined by tests in Mathematics and English is required

## Transfer Admission

Students who have completed work at other accredited colleges may apply as transfer students.

An official transcript of all academic work and a catalog with course descriptions must be provided from each institution previously attended, including secondary school.

Credit for college work accomplished at another accredited institution may be granted for equivalent BEI courses. Articulation agreements had been developed with several of the former Connecticut State Technical Colleges. These may serve as a basis for evaluation of technical program courses. In general, credits will be granted on a semester hour basis for work in which the student received a "C" or better.

College transfer students should request that all transcripts be sent to the attention of the Registrar. The transcripts must be received by the institute before granting official transfer credits.

## Credit by Examination and by Transcript

Credit for work previously accomplished may be granted when the student demonstrates proficiency by oral or written examination, or both, as required by the department chairperson, or by transcript from an accredited institution. The work that is presented for evaluation must be equivalent in full to one or more BEI courses. The College Level Examination Program (CLEP) in subject examinations is accepted for advanced standing or credit for equivalent BEI courses.

In general, experience has shown that the best interests of the student are not served by granting advanced standing unless there is evidence that the student has a thorough preparation, particularly in Mathematics and Physics.

## Advanced Placement

BEI accepts evidence of college level achievement for advanced placement. BEI will accept course work completed with a Final Grade of 3 or higher in courses administered by the Advanced Placement Program of the College Board in the following subject areas:

English, U.S. History, Economics (micro), Government and Politics; Physics C; Calculus AB and BC; Computer Science A and B.

*Senior Project demonstration*

## Admission of International Students

BEI regularly enrolls students from many nations. International students must submit transcripts of all academic work and the results of English Language tests no later than six weeks prior to the term in which they seek admission. International students must pay a fifty ($50) dollar registration fee *(non-refundable)* and 1/2 year tuition before an I 20 will be issued.

Students whose native language is other than English are required to demonstrate proficiency in English by achieving at least a level 108 in the English Language Service (ELS), or by scoring 500 or better in the TOEFL (Test of English as a Foreign Language); or by successfully completing one year of college credit English at an accredited American college; or by successfully passing the ELS placement test upon arrival at BEI.

Students unable to demonstrate proficiency in English will be referred to the English Language Service Inc. center located on the nearby University of New Haven campus.

## Special Students

Students who are not candidates for degree programs may enroll for courses providing they are qualified to undertake the courses chosen. Such students are classified as special students

## Measles/Rubella

Public Act 89-90 requires that all full-time or matriculated Connecticut college students born after December 31,1956 provide proof of adequate immunization against measles and rubella, including such documentation as a medical record, a physician's statement, or your elementary or secondary school health record. Exemptions will be granted only (1) for medical reasons, confirmed by a physician's statement; (2) if you have had measles and/or rubella and have a physician's or health department certificate so stating/ laboratory evidence demonstrating immunity must be presented; or (3) if your religious beliefs do not allow you to be vaccinated and you sign a statement to that effect. If you claim a religious or medical exemption and there is an outbreak of measles or rubella on campus, you may be excluded from college activities, including classes and exams.

**Adequate Immunization**: MEASLES: All new and readmit students born after December 31,1956 must provide verification of two (2) doses of measles vaccine—one dose administered after January 1,1969 and a second dose after January 1,1980. If two (2) doses of measles vaccine are required, you must wait at least 30 days before the second dose can be administered. RUBELLA: (German Measles) One dose administered after the student's first birthday is considered adequate immunization.

# Tuition and Fees

The schedule of tuition and fees follows:

| | |
|---|---|
| Application fee (not refundable) | $ 40.00 |
| Registration per semester | 20.00 |
| Tuition per credit hour (12 or less) | 275.00 |
| (13 or more) | 485.00 |
| Change of course | 10.00 |
| Laboratory (per lab course) | 20.00 |
| Promissory note fee | 25.00 |
| Transcript | 4.00 |
| Commencement fee (Required of all degree recipients) | 90.00 |
| Returned check fee | 20.00 |
| **Activity Fees (Elective)** | |
| Basic Activity Fee (payable to the Engineers Club) | 10.00 |
| Membership in I.E.E.E. (payable to the Engineers Club) | 20.00 |
| A.S.M.E. Club Membership (payable to Engineers Club) | 20.00 |

The trustees of the University reserve the right to change tuition rates and to make additional charges whenever they believe it to be necessary.

Full payment of tuition and fees or authorization for billing a company must accompany registration. Payments may be made in the form of cash (in-person only), check, money order, MasterCard, VISA or American Express. The minimum charge on all credit card transactions is $50.00. All checks are payable to Fairfield University.

No degree will be conferred and no transcripts will be issued for any student until all financial obligations to the University have been met.

For the tuition refund policy, see page 7.

*Deferred Payment*

During the Fall and Spring semesters, students deemed eligible may defer payment on their tuition as follows:

For students taking less than six credits — at the time of registration the student pays one-half of the total tuition due plus all fees and signs a promissory note for the remaining tuition balance. The promissory note payment due date varies according to each semester.

For students taking six credits or more — at the time of registration, the student pays one-fourth of the total tuition due plus all fees and signs a promissory note to pay the remaining balance in three consecutive monthly installments. The promissory note payment due dates vary according to the semester.

Failure to honor the terms of the note will prevent future deferred payments and affect future registrations.

*Reimbursement by Employer*

Many corporations pay their employee's tuition. Students should check with their employers.

If they are eligible for company reimbursement, students must submit, at in-person registration, a letter on company letterhead stating approval of the course registration and the terms of payment. The terms of this letter, upon approval of the Office of the Bursar, will be accepted as a reason for deferring that portion of tuition covered by the reimbursement. Even if covered by reimbursement, all fees (registration, processing, lab or material) are payable at the time of registration. Students will be required to sign a promissory note which requires a $25.00 processing fee. The note states that an outstanding balance must be paid in full prior to registration for future semesters. A guarantee that payment will be made must be secured at the time of registration by either a MasterCard, VISA or American Express credit card. If the company offers less than 100% reimbursement, the student must pay the difference at the time of registration and sign a promissory note for the balance. Letters can only be accepted on a per semester basis. Failure to pay before the next registration period will prevent future deferred payments and affect future registrations.

*Bill My Company*

A student may submit a written authorization from the student's employer clearly stating that the company will pay all or part of tuition and/or fees to the University directly with no conditions attached. In this case, no promissory note or agreement is required. Any portion of tuition or fees not covered by the authorization is due from the student upon registration.

*Financial Aid*

Financial Aid is available to all students in need. For Connecticut students, grants are available from the Connecticut Independent College Student Grant program (CICSG) to supplement Federal Aid. A variety of Federal Aid programs are available including Pell Grants and guaranteed student loans (Stafford Loan). To apply for any of these, fill out a Free Application for Federal Student Aid (FAFSA) for 1994-95 **as soon as possible**, and mail it in the envelope provided with the form to the processing center. When you receive a blue Student Aid Report from the Department of Education, take or mail it, along with a complete, signed copy of your 1993 Federal Income Tax Return to the Financial Aid Office, Fairfield University, CT 06430. Be sure to note on the SAR that you are a BEI student. The Director of Financial Aid is James T. Anderson, whose number is 254-4125. For more detailed information, see page 7.

*Scholarships*

Scholarship Funds are contributed by Corporations, Alumni, Faculty and Friends of BEI. In addition, BEI had set aside a portion of it's funds prior to 1994 to provide scholarships for entering and upperclass students.

Where appropriate, these scholarships carry the name of the Founders and Builders of BEI or names of Corporations which have made annual grants of scholarship funds to BEI.

The BEI School offers annual awards to deserving members of the graduating class of Community Technical Colleges in the Fairfield County area and Westchester Community College. Awards are made upon the recommendations of the faculties of these colleges and interviews with the students.

Scholarships are available to deserving graduates of the region's high schools upon recommendation of the school administration. The Excellence in Mathematics and Science Award qualifies the student for consideration for a scholarship.

Other scholarships provided by sponsors and presented to students upon the recommendation of the Scholarship Committee are as follows:

**Theodore Meeker Perkins Memorial Award**
*Sponsor—Friends and Family*

**Daniel J. Diasio, Sr. Scholarship**
*Sponsor—Richard L. Diasio*

**Name Scholarship**
*Sponsor—Society of American Military Engineers*

**Martha K. Rogers Memorial Scholarship**
*Sponsor—Bequest*

**Alexis & Barbara Zaveruha Scholarship**
*Sponsor—Victor Zaveruha*

**William F. Hawkins Memorial**
*Sponsor—Friends and Family*

**Joseph McNamara Memorial**
*Sponsor—Friends and Bequest*

**Perkin Elmer Corp. Scholarship**

**Pitney Bowes Corp. Scholarship**

*Supporting Corporations and Organizations*

The following corporations and organizations contributed to BEI students fiancial aid:

U.S. Baird Corporation
Baldwin Graphic
Beardsley, Brown & Basset
Bodine Foundation
Bowater, Inc.
Bridgeport Hydraulic
Dresser Industries
Eaton Corporation
General Electric
Harvey Hubbell, Inc.
Hollander Foundation
Hughes Aircraft
IBM Corporation
Martin Marrietta
Microphase
Nash Engineering
Olin Corporation
Perkin Elmer
Pitney Bowes
Sikorsky Aircraft
Quantum Chemical
Textron Lycoming
United Technologies
University Publishing Company
Wahlstrom Foundation
Vectron Laboratories

# Student Information

## (The BEI Student Handbook)

These sections of the catalogue contain the Student Handbook and have been prepared to provide a ready source of information about the School's policy, rules and traditions. Within the Handbook the student should find answers to many of the questions arising in daily relationships at the School.

The administration and faculty suggest that this book be kept for daily use. Matters of importance not included in the text will be conveyed later in classroom announcements or through personal contact with the staff and faculty.

The catalogue of the School, issued every year, serves as a guide on such matters as curriculum, description of courses, tuition payments, and the college calendar for the current school year. It is suggested that students keep a permanent file of applicable catalogs in the event the curriculum and degree requirements change during their stay at the School.

The administration recognizes that the catalog and handbook in no way replace personal contact with the staff and faculty, all of whom are available to answer questions or advise when problems arise.

# Student Handbook

## Classroom Facilities

The main offices/School are located in McAuliffe Hall. Laboratories and classrooms are located in McAuliffe, Xavier, and Bannow. All students are expected to conduct themselves in such a manner as to respect those properties at all times.

In general, smoking is not permitted within the school buildings.

If students wish to smoke during the recess between classes, they must smoke only in specified areas, and are responsible for preventing litter and fire hazard. Students are requested to be as quiet as possible when passing between classes in order not to interfere with the other occupants of the school.

## Attendance

Regular attendance is essential if a student is to pursue successfully a course of study. Even a single absence may seriously affect a student's progress Should illness or other situations arise causing a student to be absent for two consecutive classes in any subject, the student will be dropped from the course. To be reinstated in that course, the student must obtain written permission from the Dean or representative. The student must satisfy the Dean that the absences were unavoidable and standing in that class has not been reduced.

The instructor should be notified in advance if an absence is anticipated. Arrangements can usually be made to get the Coming assignments so homework may be completed and ready to be turned in upon return to class.

## Dropping Subjects

If it becomes necessary to drop a subject because of illness, business, or personal reasons notify the instructor and the office immediately, by completing the appropriate form.

## Parking

A parking permit is required to bring a car on campus. Directional signs, stop signs and other traffic instructions are to be strictly observed.

## Course Selection

Courses should be chosen in accordance with the latest catalog. Degree requirements are set by the catalog for the year of admission as necessarily modified in later years The students should make certain that all the prerequisites are satisfied for each course selection.

Counselors are available at McAuliffe Hall during regular evening hours. They should be consulted if there are any questions pertaining to curriculum requirements.

## Administration

The School administration offices are open during business hours Monday through Friday- 9:00 A.M thru 4:30 PM. and to 10 PM while school is in session. Day or evening conferences by appointment may be arranged through the office.

## Tutorial Service

Free tutorial services are available at McAuliffe Hall in the various fields of Mathematics. Students desiring such service shall contact the School office to arrange for a tutorial schedule. Tutoring in other courses may be arranged with the Department Chairperson.

## Student Convocations

Convocations for the entire student body are held at least once each semester. The purpose of these meetings is to inform the students about changes in the administration or faculty and to explain new developments in curriculum or plans for the future. Student feedback is encouraged.

The first assembly of the year is the convocation for all new students. The Dean and Department Chairmen are introduced and the student is introduced to school policy, rules, and operational procedures.

A dinner dance is arranged annually by the BEI Alumni Association for the enjoyment of the students. The highlight of the evening is the recognition of supporters of BEI.

## Student I.D.

Every student is issued an I.D (Identification) card with his/her photo and social security number. All students are requested to carry their I.D. when on campus.

## Transcripts

Students requiring official transcripts should advise the Registrar by letter or recognized release form, of the need for a transcript record, and to whom this record should be addressed.

## Mutual Responsibilities

The School's major consideration is the welfare of the student It is its responsibility to provide the very best education that it is capable of providing. However, it is the student's responsibility to relate any difficulties experienced to the faculty member or to the administration. Constructive criticism is always accepted and is responded to by appropriate action.

## Student Problems

A detailed Grievance Adjustment and Appeals Procedure is in force. All disputes or problems shall be presented in the manner for which provision is made in that procedure. See page xx.

## Student Behavior

As engineering students, it is expected that those at the Institute will conduct themselves in an orderly, refined and considerate manner. Violations will be noted in the student's record by attaching a copy of a letter to the student from the Dean of Students citing the infraction. Disciplinary action may be taken as required, including expulsion which will make the student ineligible for the granting of the BEI degree.

**It is expected that every person in the BEI higher education community will be treated with dignity and assured security and equality. However, individuals may not exercise personal freedoms in ways that invade or violate the rights of others.**

**BEI condemns all acts of racism and bigotry and particularly condemns any act of hatred, harassment or violence based upon race, ethnicity, disability, religious or cultural origin, gender or sexual orientation.**

# Procedure for Grading

## Homework

Homework is assigned at nearly every meeting of the class. Experience has shown that students who do this homework regularly become proficient in the subject being taught. To encourage the homework habit, the School has established a regulation that at least 80% of the homework assigned in a course must be completed before a grade will be given for that course. If this is not done, the student's work will be recorded as incomplete. Other reasons for a grade of "incomplete" are absence from five-week tests, semester examinations, etc.

## Uniform Grading

Guidelines have been adopted to promote grading uniformity. The policy is as follows:

Final grades in the technical subjects are based on weighted averages of homework, quizzes, tests and examinations. In general, classroom discussion and recitation are not graded. Experience has shown that students are more disposed to ask questions and engage in sincere discussion when these activities are used solely for acquiring knowledge rather than improving a grade. However, in certain seminars or other classes requiring oral reports, that portion may be graded.

The following guidelines are used in technical departments except as noted below:

| General Guideline | Weights |
|---|---|
| Homework Grade | 1/6 |
| Quiz Grade | 1/6 |
| Test Grade or Grades | 1/3 |
| Examination | 1/3 |

| General Guideline With Term Paper | Weights |
|---|---|
| Homework Grade | 1/8 |
| Quiz Grade | 1/8 |
| Test Grade or Grades | 1/4 |
| Examination | 1/4 |
| Term Paper | 1/4 |

Although these general guidelines are applicable to most departments and courses, the nature and content of certain courses make it necessary to establish specific rules. Some of these are listed as follows:

| Laboratories | Weights |
|---|---|
| Report Grades | 100% |
| Lab Final Exam may be used. | |

| Seminars | Weights |
|---|---|
| Written Reports | 50% |
| Oral Reports | 50% |

| Mechanical Engineering | Suggested Weights |
|---|---|
| Homework Grade | 10% |
| Quiz Grades | 10% |
| Test Grades | 40% |
| Examination | 40% |

| Engineering with Design Projects | Suggested Weights |
|---|---|
| Homework Grade | 20% |
| Quiz Grades | 10% |
| Test Grades | 20% |
| Examination | 30% |
| Design Projects | 20% |

Some latitude may be granted in grading and grade distributions. However, any exception to the above format must be established prior to the start of the course. Students must be informed of the grading procedure at the first session of each course.

## Final Examinations

The final examinations for all courses are two hours or more in length and should cover the work of the entire term.

## Grading Criteria

The following system of grading is in use:

| Grade Definition | Numerical Equivalency | Quality Points |
|---|---|---|
| A Outstanding | 93 – 100 | 4.00 |
| A- | 90 – 92 | 3.67 |
| B+ | 87 – 89 | 3.33 |
| B Superior | 83 – 86 | 3.00 |
| B- | 80 – 82 | 2.67 |
| C+ | 77 – 79 | 2.33 |
| C Acceptable | 73 – 76 | 2.00 |
| C- | 70 – 72 | 1.67 |
| D Minimal but passing | 60 – 69 | 1.00 |
| F | 50 – 59 | 0 |
| FF | 0 – 49 | 0 |
| W | — | Withdrawal |
| P | 60 | * |
| I | — | Incomplete |

The lowest passing grade is 60%. A student receiving a course grade between 50% and 59% will receive the letter grade of F but may request a conditional examination prior to the next time the course is offered for the purpose of removing the F. A student receiving a grade below 50% cannot take a conditional exam and must repeat the course. The conditional examination grade is substituted for the final examination grade and the course grade is recalculated. A recalculated course grade of 60% or better is required in order to remove the F. The grade "P" is used to replace the F and has an equivalent numerical grade of 60 which will be used in the calculation of the average of all courses. The grade "P" will also have an equivalent quality point of 1 (one) to be used in calculating QPR. On the student transcript the symbol "P60" will be used to replace the "F".

If the recalculation of course grade is less than 60% then the "F" grade stands with no alteration.

The student must apply in writing for permission to take the conditional exam. A conditional exam fee is required and the fee receipt must be attached to the request form. The student request must be approved by the course instructor and department chairperson. The approved receipted form must be presented to the instructor responsible for preparing, administering and grading the exam. The instructor will be reimbursed at the current rate.

The conditional exam is preferably taken within the first five weeks of the term following the failure and on a date arranged by the Dean.

## Incompletes

If the required course work is not completed, (e.g. Homework, tests, etc.) the grade "I" is recorded. The grade obtained for the work which has been completed, however, should be included in the grading report.

Incomplete course work must be made up before a student is entitled to a final course grade. The homework grade will be based on the total number of papers assigned.

Students who receive a grade of "F-Inc." will not be permitted to make up the work. Since the course was failed. It must be repeated.

Incompletes may be removed and replaced with the grade earned upon completion of the work. The work must be completed prior to the next course offering.

## Grade Reports

Reports are issued to the student at the end of each semester.

Student report cards and transcripts are prepared using the letter grade; quality points are applied to determine the quality point ratio.

## Audit

Course audit is restricted to refresher for a course previously taken at BEI or for which transfer credit has been granted.

## Satisfactory Academic Progress

The measure of a student's academic progress is not only the number and titles of courses that have been completed but also the overall quality of a student's work in these courses. This overall quality is expressed through an unweighted average of a student's grades, either for a term or cumulatively When courses have been repeated, only the most recent effort will be used to calculate the Cumulative percentage although the earlier attempts will remain on a student's record and transcript.

While exceptions may be made through written application to the Dean, the following minimum Cumulative averages should be met for a student to be considered to be making satisfactory academic progress:

**Associate Degree**

| Credits * | 0–29 | 30–59 | over 59 |
|---|---|---|---|
| Average (overall)† | 1.8 | 1.9 | 2.0 |

**Baccalaureate Degree**

| Credits * | 0–34 | 35–68 | 69–102 | over 102 |
|---|---|---|---|---|
| Average (overall)† | 1.8 | 1.9 | 2.0 | 2.0 |
| Average (major)† | 1.8 | 1.9 | 2.0 | 2.0 |

* Credits include those earned at BEI transferred from another college or obtained by examination.

† Cumulative averages are calculated based on BEI courses only.

## Probation, Dismissal and Reinstatement

Students whose cumulative averages are below the minimum satisfactory levels indicated above will be automatically placed on probation, a warning that a student's work must improve if he or she is to continue toward a degree. A third consecutive probation will be grounds for dismissal although a student may appeal this action in writing to the Dean.

Students who have been dismissed may be considered for readmission through written request to the Dean. Each such request will be judged on its own merits, considering such factors as reason for earlier unsatisfactory progress, time lapse, changes in a student's family or job, and so forth.

## Degree Requirements

Consult the specific requirements for the Bachelor or Associate Degrees elsewhere in the catalogue.

**Residency Requirement**

**1. Bachelor Degree:**
The minimum residency requirement for the Bachelor Degree is 30 semester hours which shall include a minimum of 24 semester hours of Engineering Science or Design core courses, Laboratories and Seminars. 15 semester hours minimum must be in the Engineering major Exceptions to these conditions can be made only by written approval of the appropriate Department Chair. The Department Chair shall provide a listing of applicable courses to the Dean for use by the counselors

**2. Associate Degree:**
The minimum residency requirement for the Associate Degree is 24 semester hours which shall include a minimum of 14 semester hours of Engineering Science or Design core courses, Laboratories and Seminars 9 semester hours minimum must be in the Engineering major. Exceptions to these conditions can be made only by written approval of the appropriate Department Chair. The Department Chair shall provide a listing of applicable courses to the Dean for use by the counselors.

## Time to Complete Degree

The ideal BEI Baccalaureate program without other college work requires six years of study. It is anticipated that most students should be able to complete the program within a required maximum of 10 years Individual failing to meet this requirement may petition the Dean for an extension. Approval of the Department Chair is required.

## Dean's List

A Dean's List is compiled and issued after the completion of each semester. Students carrying two or more subjects who have attained a QPR of 3.5 or better are qualified for the Dean's List.

## Graduation Policy

A graduation application is REQUIRED by April 15th of the year in which you expect to graduate. Graduation is NOT automatic! The final responsibility for meeting program requirements rests with the student.

Students are STRONGLY encouraged to see a counselor to verify eligibility PRIOR to the start of their last semester.

The basic process is given below:

1.) The Counseling Office will evaluate a students' transcript at any time and will indicate the requirements which still need to met. (It is recommended that students request an initial transcript evaluation when 30 credits have been earned. This should be done prior to paying the non-refundable graduation fee.)

2.) A candidate for graduation will be evaluated under the catalog most appropriate, as follows: The catalog used will be that under which the candidate first enrolled except as noted in the following exceptions: (1) If the candidate was re-admitted to the college after an absence of three consecutive semesters, the catalog used shall be that under which the candidate was re-admitted.(2) When the candidate changes program during attendance, the catalog used shall be that which was in force at the time of the last change in program. (3) If there has been a change in General Education requirements of the program, the candidate must complete these requirements prior to graduation.

## Special Diploma

A unique feature of the commencement at BEI is the recognition of those who have given loyal support to the student. A special diploma is awarded to each graduate's spouse, parent or friend as requested by the student.

## Leave of Absence

Students may take up to one year (3 consecutive semesters) leave of absence with prior approval of the Department Chair. Absence may be an acceptable reason for extension unless:

1. The student extends absence beyond one year or fails to obtain prior approval before taking a leave of absence in excess of one term. Such a student is treated as a re-entry.

2. A re-entry student's record will be reviewed and a new curriculum schedule planned based upon the program at the time of re-entry. Past BEI courses, as well as transfer credits, will be reviewed and applied to the re-entry program. Courses completed more than five years before re-entry will be reviewed for course content to assure that it is current and satisfies the need for subsequent courses for which they are a prerequisite.

## Who's Who in American Colleges and Universities

Students are selected for Who's Who in American Colleges and Universities based on their grade average (QPR) and personal achievement in life interest (i.e., community activity). In addition to this honor of recognition, the student's name and achievements are published in that year of Who's Who in American Colleges and Universities.

## The BEI Engineering Club

This is a club run by the students for the students in the interests of promoting professionalism. The club sponsors tours, seminars, and various other student activities.

For various functions and programs, the Club requires an activity fee. The fee covers associate membership in the professional society (A.S M E or I.E.E E ) In addition, the fee will cover participation in school functions in whole or part depending on cost. The fee may also go toward the procurement of various equipment and materials deemed beneficial to the student body.

A schedule of Club events will be posted at the beginning of the school year. All questions regarding Club operation should be directed to the BEI office.

## Student Council

The BEI Student Council was formed in the Fall of 1986 for the purpose of representing the students' interests in meetings with the BEI Administration, as well as communicating the plans and goals of the Administration to the students. Elections are held each fall during the first student assembly to fill any positions left open for that school year. There is, ideally, at least one student to represent each major (electrical, mechanical, information systems).

Students interested in becoming actively involved in this organization should notify the Dean prior to the first student assembly of the school year.

## BEI Alumni Association

The BEI Alumni Association is composed of graduates of the School. Social and educational meetings are held regularly. At the Annual Meeting, the graduating class of the year is formally inducted into membership in the Association. The Association makes scholarships available for upperclass BEI students.

# School Tradition

## School Colors

The colors of the Bridgeport Engineering Institute were garnet and pearl grey. These continue to be used as deemed appropriate by the administration, faculty, students, and alumni.

## School Seal

A replica of the official seal of the Bridgeport Engineering Institute appears on page one of the Catalogue. Its main features include the torch of knowledge shining upon an engineering textbook displaying the drafting triangle representing the practical side of engineering work and the atomic structure representing its foundations in the physical sciences. Also displayed are the Institute name, its founding date and its familiar identity BEI.

## School Song (Alma Mater)

Like other schools, BEI has an Alma Mater. The tradition of service and effort it recalls to both student and alumni make it a fitting part of our commencement of other special convocations.

### ALMA MATER

When engineers are called to build this Country's wealth and might.

The many ones from BEI strive for that future bright

On land and sea, in air and space, our Alma Mater's hand

Has led her own glorious deeds that fill this noble Land.

A legacy of toil was left by those who went before

Forever those of strength and faith shall enter through thy door

Oh, Alma Mater, may it be that ever we shall sing

Your songs of praise and loyalty and honors to you bring

Men of true vision gave to us this college quite unique,

Where those determined to succeed now reach the goals they seek

Pray, Alma Mater, ever stand to serve where'er you can

A tribute to their leadership and to their faith in man.

# Curriculum Counselors

## Counseling

The School faculty, curriculum counselors, and administrative staff are available for counseling, guidance, and assistance during the hours of 6:30 to 9:00 PM. on regular school evenings. Consult the posted listings at each office to determine when specific staff personnel are scheduled to be on duty.

If a student wishes to discuss any matter regarding his or her records, schedule, or standing, that student must request an appointment at the school office on the preceding school night, or call the main office before noon of the day that the interview is desired This will allow the office personnel sufficient time to withdraw the student's records from the main office files. Such discussions without adequate records are generally difficult and are usually not productive.

Students are encouraged to have their transcript records reviewed annually in order to keep abreast of their progress. It is the policy of the School to provide counseling to a student upon his request within a reasonable period (usually 2 weeks) and take into account any problems, personal or academic, in order to help him achieve his goal. In some cases, Department Chairmen are asked to discuss and evaluate the student's knowledge of a subject in which he is requesting credit. In some instances they may provide other means to determine credit: for example, a project may be assigned in the student's major and this project will be graded for credit.

It is also advised that students' use this catalog for keeping a record of all subjects as completed and the grade received. Students should use the tabulation of degree requirements in the catalog in the year in which they started at the School as a basis for maintaining their record. It is also advised to follow the sequence of study as shown in the course progression chart

The student is advised that course and curriculum changes may affect their program of study. Course and curriculum changes will be published in subsequent issues of the catalog. The student is responsible for integrating these changes into the program of study.

**Peter Bashar,** *Counselor*
(B.S.E.E., Bridgeport Engineering Institute) Avionics Systems, Engineer, Sikorsky Aircraft

**Anthony Guglielmo,** *Senior Counselor*
(A S.M E, Norwalk State Technical College; B.S M.E., Bridgeport Engineering Institute) Senior Project Engineer, Sikorsky Aircraft

**Nicholas J. Ivanoff,** *Counselor*
(A.S.M.E, Norwalk State Technical College; B.S.M.E., Bridgeport Engineering Institute; M.S.M.E, University of Bridgeport) Senior Mechanical Engineer, Norden

**Joseph L. Laganza,** *Counselor*
(BS.M E, Bridgeport Engineering Institute) Senior Staff Engineer, SVG Lithography Systems

**Kim E. Siladi,** *Senior Curriculum Counselor, Danbury*
(A S, Norwalk State Technical College; B.S.E.E, Bridgeport Engineering Institute) Senior Software Engineer, Executone Information Systems, Inc.

## Faculty Advisors and Faculty Mentors

To expand BEI's services to students a system of student-faculty interaction has been developed utilizing volunteer faculty to serve as mentors and advisors. The advisor serves to assist and guide the student in course selection, academic progress and career choice. The mentor serves to assist and guide the student in development of the engineering design concept throughout the student's work in the major. An important component of the faculty interaction with the student is to listen particularly for feedback on course, program and institution issues.

Students are encouraged to select a faculty advisor and sign up for appointments in the Counseling Office.

# Class of 1993

**Bachelor of Science in Mechancial Engineering**

Charles A. Baucicaut
Richard S. Baudisch
Lauro F. Cabral
Stephen Dobi, Jr.
Luis J. Enriques
John Matthew Fanti
William H. Fulton
Joel-David Golding
Gerard David Murphy
Frank Allen Nicholas
William J. O'Brien, Jr.
Anthony Paul Obuchowski
Shawn William Sullivan
Ronald Villard

**Bachelor of Science in Electrical Engineering**

Luis E. Amigo S-G
Russell Bechard
Douglas Richardson Bennett, Jr.
James Clayton Brewer
Timothy Ray Bruton
Neil Diedrickson
Pasquale Divito
Roger Figueroa
Donald S. Hailey
Harold James Hansen, Jr.
John Hoden Hinn
Sreenivas Jallipalli
John Jay Marcinek
Zoltan Molnar
Karl B. Moore
David J. Pels
Donald Pierre-Charles
James Pjura
Eileen J. Richard
Robert George Stacy
Paul John Stock
Richard J. Talcik
Luis F. Vargas
Eugene Vellucci, Jr.
Vincent Andy Venitelli

**Associate in Engineering**

Ellis James Cooper
Pat Manivanh
John J. O'Neill
Brian Matthew
Ian Saffo
David E. Slack
Stephen John Swetz
David Cutter VanStone

**Honorary Diplomas (Relatives of Graduates)**

Bernadette Baldino
Paulette Baucicaut
Rita Baudisch
Tammi Jo Bechard
Diana L. Herder-Bennett
Doreen Brewer
Mary Ann Bruton
Elizabeth M. Cabral
Janice Diedrickson
Lynn Dobi
Leslie A. Fanti
Selbia Figueroa
Candido Figueroa
Janice Fulton
Maria Soria-Galvarro V.
Charlotte Golding
Leo Golding
Marci Golding
Dawn Hansen
Sandra L. Hailey
Bora Hinn
Marilynn J. Molnar
Cheryl Ann Moore
Nicole Adele Moore
Kayla Charlene Moore
Denise Murphy
Celestina A. Nicholas
Deborah T. O'Brien
Nancy O'Brien
William O'Brien, Sr.
Carmela Obuchowski
Jean F. O'Neil
Jennifer P. O'Neill
John J. O'Neill
Paul M. O'Neill
Timothy J. O'Neill
Edward Pels
Carmelia Pierre-Charles
Betty Ann Pjura
May Salisbury
Gretchen Slack
Catherine Stacey
David Stacey
Betty Steed
Anita V. Stock
Donna Mary Sullivan
Amy Swetz
Andrew Swetz
Brian Swetz
Leah Swetz
Micheal Swetz
William Taht
Madeline Y. Talcik
Cheryl A. Thomas
Doris A. Vargas
Pamela Vellucci
Sandra Venitelli
Enice Villard

# Class of 1994

**Bachelor of Science in Electrical Engineering**

James M. Bizak
Richard Buhlmann
Luis Oswalk Carrena
Robert T. Cook, Jr.
Michael Davis
Kevin Dennis
Patrick Domond
Carmine D'Onofrio
Robert Fanzutti
Michael Golebieski
Charles Edward Hanson
Joseph Johnson
Michael P. Kaczetow
Kenneth Lais
John Lambertson
Nancy Edith Lasell
Errol Roy Lindo Lee
Francis Xavier MacIlvain
Pat Manivanh
Robert Parrillo
John P. Peterson
Carl Pinto
Daniel Robinson
Wilfredo Rosado
Pasquale J. Salvo
Frank Santilli
Carl G. Schuster
Daniel Francis Swoszowski
Troy Testone
Soky Ung

**Bachelor of Science in Manufacturing Engineering**

William C. Harris, Jr.

**Bachelor of Science in Mechanical Engineering**

Yamil Arias
Norman Tze Chuen Chan
Hilary Farnsworth
Peter Gus Laskos
Hugo Lopez
Richard George Mossey
John J. Mercede, Jr.
Daniel J. Plavcan
Jeffrey Thomas Stone
Robert C. Wellington III

**Associate in Engineering**

Yamil Arias
Thomas E. Condon
James Cornell
Thomas Hubbard
Annmarie Miller
Charles Moore
Lionel Morales
Michael Paul Strazzeri
Steven Swenson
Gregory Wityak

**Honorary Diplomas (Relatives of Graduates)**

Alba L. Barreto
Donna M. Bizak
Laura Buhlmann
Elizabeth Carrena
Christopher Carrena
Lisa Chevarella
Susan D. Condon
Majorie W. Cook
Merial Cornell
Maria Luiza Da Rosa
Julia Davis
Mary F. Dennis
Meghan A. Dennis
Stephanie A. D'Onofrio
Mary Fanzutti
Brenda J. Golebieski
Kathryn Hanson
Laura Harris
Sroy L. Heng
Kathleen Hubbard
Susanne Johnson
Young Kaczetow
Silve Lambertson
Jeanet Marcela Laskos
Patricia Christine Lee
Frances C. MacIlvain
Jessica M. MacIlvain
Marlene J. MacIlvain
Samantha F. MacIlvain
Vincent N. MacIlvain
Manivanh Manivanh
Lorraine S. Mercede
James S. Miller
Jeanne Madeline Moore
Dominick Morales
Joshua Morales
Kyfer Morales
Ashley Mossey
Derek Mossey
Kristine Linnea Mossey
Janice Narus
Kim Parrillo
Dipti Patel
Helga Peterson
Ruben Peterson
Ana H. Pinto
Pamela J. Pinto
Patricia L. Plavcan
Nancy Robinson
Wanda T. Rosado
Elizabeth Salvo
Mary Santilli
Harsha Shah
Ronald P. Skirkanich
Deirdra F. Moriarty Stone
Michael Strazzeri
Kathleen Marie Swoszowski
Denise Ann Watson
Wendy L. Wellington
Harold F. Wylie

# BEI Alumni Association

The BEI Alumni Association (BEIAA) is a not-for-profit organization whose members are graduates of the School. The BEIAA mission is to: (1) promote active alumni participation in BEI events and activities; (2) act as a liaison between the alumni and the administration of the Institute; and (3) manage the resources of the association.

As a service organization, the Alumni Association accomplishes its mission; by contributions to "The Nighthawk", a school newsletter which is distributed twice yearly to the student body and alumni.

At the Annual meeting, the graduating class of the year is formally inducted into membership in the Association New alumni are encouraged to become involved in the affairs of the Association through social, educational and business meetings that are held regularly.

**Officers of the Alumni Association (1993-1994)**
**President,** *Edward Keplinger, Class of 1973*
**Vice President,** *Stephan Rescsanski, Class of 1968*
**1st V.P. Danbury,** *Ester Ziegler, Class of 1978*
**Treasurer,** *Gerald L. Belanger, Class of 1983*
**Secretary,** *Joe Hajla, Class of 1978*

## Fellow of the Institute

Bridgeport Engineering Institute recognized the contributions to the college by Alumni, trustees, faculty and staff through election to the degree of Fellow of the Institute. This award is reserved for those individuals who have provided the college with ten or more years of unusual devotion and service in teaching, administration, active operation or alumni activities.

New Fellows are nominated and elected by the Fellows themselves, meeting at least once a year

William H. Alderson, Jr.
Drew Auth
Anand P. Bhatia
Otto J. Calder
Jerome G. Caplan
Daniel F. Dlugos
Alan Dubrow
Anthony T. Fonck
Richard F. Frye, Jr.
Anthoony Guglielmo
Harvey Hoffman
Bruce Hunter
Arthur H King
John M. Kowalonek
William M. Krummel
Ralph A. Langanke
George M Lasell
Frank J. Liburdy, Jr
Gilbert C Mott
Joseph C. Olson
William J Owens
H. Wheeler Parrott
Melvin J. Rich
George Sargent
William Simics
John P. Walsh
Richard G. Weber
Robert E. Wisnieff
Harold Yudain
Esther Ziegler
Geza Ziegler


## Community Service Fellows

Bridgeport Engineering Institute recognized individuals who have made distinguished contributions to the communities served by the College. The award of Community Service Fellow is made to an individual whose activities have resulted in the enhancement of the health, educational or cultural resources of the community.

**Fellows**
Verne L King
Dorothy B. Larson
Patrick A Pallotto
John G. Phelan
Helen Wasserman
Dr. Geraldine F. Johnson

# Summary of Degree Requirements

**Summary of Degree Requirements**—The minimum requirements for each degree are listed below. The recommended program of study and tabulation of required courses are listed in the appropriate departments. Upon entering BEI the Curriculum Counselor assigned will review the exact course of study required for each individual student to achieve these minimum requirements. For students entering as first year degree students the tabulation represents the requirement However, for students entering with transfer credit or planning to take courses for transfer from other colleges while attending the School, modifications will be established in consultation with the assigned Curriculum Counselor. **A student must receive an average grade of C (QPR of 2.00) or better in all BEI courses in the overall program and in the elected major.**

## Residency Requirements.

**1. Bachelor Degree:**
The minimum residency requirement for the Bachelor Degree is 30 semester hours which shall include a minimum of 24 semester hours of Engineering Science or Design core courses, Laboratories and Seminars. 15 semester hours minimum must be in the Engineering major

**2. Associate Degree:**
The minimum residency requirement for the Associate Degree is 24 semester hours which shall include a minimum of 14 semester hours of Engineering Science or Design core courses, Laboratories and Seminars. 9 semester hours minimum must be in the Engineering major.

## Time to Complete Degree.

The recommended BEI Baccalaureate program without previous college work requires six years of study. It is anticipated that most students should be able to complete the program within a maximum of 10 years. An individual failing to meet this requirement may petition the Dean for an extension. Approval of the Department Chair is required.

## Minimum Requirements for the Bachelor of Science Degree

| SUBJECTS | MINIMUM CREDIT HOURS BS IN ME | BS IN ME MANUFACTURING | BS IN EE | BS IN ISE |
|---|---|---|---|---|
| Mathematics, including Calculus, Differential Equations and Applied Engineering Mathematics | 18 | 18 | 17 | 21 |
| Computer Science | 6 | 6 | 6 | 18 |
| Physical Sciences, including Physics and Chemistry | 15 | 15 | 15 | 12 |
| Engineering Science Core, Including Engineering Graphics, Statics, Thermodynamics, Engineering Materials, Electrical Circuits | 23 | 20 | 20 | 16 |
| Humanities and Social Science: English, Economics, History, Literature, Religious Studies and Electives | 21 | 21 | 21 | 21 |
| Professional Mechanical Engineering Science & Design courses, including Laboratories and Seminars and Electives | 44 | 32 | 3 | — |
| Manufacturing Engineering Science and Design courses including Manufacturing and Robotics Laboratories | — | 15 | — | — |
| Professional Electrical Engineering Science and Design courses, including Laboratories and Seminars and Electives | 6 | 6 | 50 | 19 |
| Information Systems Engineering | — | — | — | 25 |
| Industrial Management and Engineering Economy | 6 | 6 | 6 | 6 |
| **TOTAL** | **139** | **139** | **138** | **138** |

## Minimum Requirements for the Associate in Engineering Degree

| SUBJECT | MINIMUM CREDIT HOURS MECHANICAL OPTION | ELECTRIC OPTION |
|---|---|---|
| Mathematics, Calculus | 9 | 15 |
| Computer Science | 3 | 3 |
| Physical Sciences, including Physics and Chemistry | 15 | 15 |
| Engineering Science Core, Engineering Graphics, Statics, Electrical Circuits, Engineering Materials | 17 | 17 |
| Humanities and Social Science | 12 | 12 |
| Mechanical Engineering Science and Design | 13 | — |
| Electrical Engineering Science and Design | — | 6 |
| Industrial Management or Computer Science | 3 | 3 |
| **TOTAL** | **72** | **71** |
| Preparatory Program (if required) | 18 | 18 |
| **TOTAL** | **90** | **89** |

# Electrical Engineering

**Harvey F. Hoffman**
Chairman, Electrical
Engineering Department

The goal of the Bachelor of Science in Electrical Engineering program at the BEI School is to prepare the student for a career in electrical and electronic system and subsystem design with the potential for growth into engineering management. Accordingly, the first years of the program place major emphasis on basic mathematics and physical sciences to provide the background for the analytical approach used in the engineering science and design courses. Introductory courses are taught with an engineering applications focus. After completing the preparatory mathematics, science, and liberal arts courses a basic understanding in electrical, mechanical, and materials engineering concepts is developed. In addition, courses in engineering management and further liberal arts studies are provided to improve the students' communication skills and develop an appreciation for his/her career environment. On this basic engineering science core, advanced courses in electrical engineering further develop the knowledge of engineering science with increasing emphasis on the use of design assignments to familiarize the student with techniques used to solve practical engineering problems. To permit the student to tailor his/her program to specific career objectives, advanced elective courses are included in the later years of the baccalaureate program.

The classroom lecture and recitation studies are supplemented by laboratory work and computer applications designed to expand the student's understanding of the analytic and physical principals and to provide "hands-on" experience.

## Faculty

**Harvey Hoffman,** *Chairman & Professor*
**Robert E. Wisnieff,** *Chairman Emeritus & Professor*
**Denton Pearsall,** *Vice Chairman & Professor*

**Shahin Baghai,** *Instructor*
**Paul Botosani,** *Professor*
**William Cowles,** *Associate Professor*
**Paul Danzer,** *Senior Instructor*
**Fred DePonte,** *Professor*
**Hai K. Do,** *Instructor*
**John B. Dougherty,** *Instructor*
**Robert A. Fisch,** *Instructor*
**Pradeep Govil,** *Senior Instructor*
**Sarma Gullapalli,** *Assistant Professor*
**A. Hye,** *Assistant Professor*
**Joseph Ianniello,** *Instructor*
**Edward G. Keplinger,** *Senior Instructor*
**Vincent C. Konn,** *Professor*
**William M. Krummel,** *Professor*
**Robert J. Pellegrini,** *Instructor*
**Clement R. Pizzo,** *Associate Professor*
**Lawrence J. Reed,** *Instructor*
**Paul R. Yettito,** *Senior Instructor*

1994-1995 BACHELOR OF SCIENCE DEGREE

# Electrical Engineering

## Recommended Program of Study

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*

| SEMESTER | FIRST YEAR | SECOND YEAR | THIRD YEAR |
|---|---|---|---|
| FIRST | 104 Calculus I<br>311 Engineering Graphics-CAD I (4)<br>401 English I | 601 Statics<br>107 Differential Equations<br>503 Physics- Electricity | 705 Electron Devices and Applications<br>704 Linear Circuit Analysis<br>201 Chemistry I |
| SECOND | 105 Calculus II<br>402 English II<br>501 Physics-Mechanics | 771 Circuit Analysis I<br>111 Advanced Mathematics<br>119 Computer Science I | 709 Transform Analysis<br>202 Chemistry II<br>741 Electrical Laboratory (1) |
| THIRD | 106 Calculus III<br>502 Physics- Heat, Light, Sound | HI 30 Foundations of Modernization<br>773 Circuit Analysis II | 732 Digital Electronics<br>— Elective - Fine Arts |

| SEMESTER | FOURTH YEAR | FIFTH YEAR | SIXTH YEAR |
|---|---|---|---|
| FIRST | 715 Feedback Systems Engineering<br>403 Economics<br>706 Electron Device Models | 733 Digital Comp. Systems<br>605 Strength of Materials I<br>206 Engineering Materials | 902 Engineering Economy<br>804 Engineering Seminar<br>7XX Elective Major 2 |
| SECOND | 120 Computer Science II<br>901 Industrial Management<br>712 Electronic Engineering | 726 Communications Systems<br>719 Fundamentals of Electric Fields<br>7XX Elective Major 1 | 620 Thermal Engineering<br>804 Engineering Seminar<br>7XX Elective Major 3 |
| THIRD | 743 Intermediate Electrical Laboratory (1)<br>747 Elect. System Design Analys. (2)<br>130 Vector Analysis (2) | — Religious Study Elective<br>— History Elective | 742 Advanced Electrical Project (2) |

* The Advanced Electrical Project may be taken as independent study after the student has completed the core (non-elective) EE courses and one elective.

Engineering seminar 804 is recommended for semesters 1 and 2 of final year.

All courses 3 credit hours except as indicated in parenthesis.

1994-1995 BACHELOR OF SCIENCE DEGREE

# Electrical Engineering

## Tabulation of Degree Requirements

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*

| REQUIRED COURSES | PREREQUISITE |
|---|---|

**Mathematics:** 17 Credits:

| | |
|---|---|
| ____104 Calculus I | Precalculus, trig, or 103 |
| ____105 Calculus II | 104 |
| ____106 Calculus III | 105 |
| ____107 Differential Equations | 106 |
| ____111 Advanced Mathematics | 107 |
| ____130 Vector Analysis (2) | 107 |

**Computer Science:** 6 Credits:

| | |
|---|---|
| ____119 Computer Science I | 106, Basic Computer or 118 |
| ____120 Computer Science II | 111 |

**Chemistry and Materials:** 9 Credits:

| | |
|---|---|
| ____201 Chemistry I | Algebra or 1101 |
| ____202 Chemistry II | 201 |
| ____206 Engineering Materials | 202 |

**Engineering Graphics:** 4 Credits:

____311 Engineering Graphics CAD I (4)

**Liberal Arts:** 21 Credits:

| | |
|---|---|
| ____401 English I | |
| ____402 English II | 401 |
| ____403 Economics | 401 |

____HI 30 Foundations of Modernization
____Religious Studies Elective
____History/Social Science Elective
____Art Elective

*(Continued on next page)*

# Required Courses for Electrical Engineering (cont.)

| REQUIRED COURSES | PREREQUISITE |
|---|---|
| **Physics:** 9 Credits: | |
| ____501 Physics-Mechanics | 105 |
| ____502 Physics-Heat, Light, Sound | 501 |
| ____503 Physics-Electricity | 106, 502 |
| **Mechanical Engineering:** 9 Credits: | |
| ____601 Statics | 104, 501, 311 |
| ____605 Strength of Materials I | 120, 601 |
| ____620 Thermal Engineering | 107, 502 |
| **Electrical Engineering:** 51 Credits: | |
| ____771 Circuit Analysis I | 106, 503 |
| ____773 Circuit Analysis II | 771, 119, 107 |
| ____704 Linear Circuit Analysis | 173, 111 |
| ____705 Electron Devices and Applications | 771 |
| ____706 Electron Amplifiers and Applications | 705 |
| ____732 Digital Electronics | 705 |
| ____709 Transform Analysis Techniques | 704 |
| ____733 Digital Computing Systems | 732 |
| ____726 Communications Systems | 709 |
| ____747 Electrical System Design Analysis (2) | 705. 773 |
| ____712 Electronic Engineering | 706 |
| ____715 Engineering | 709 |
| ____719 Fundamentals of Electromagnetic Fields | 130, 709 |
| ____741 Electrical Laboratory (1) | 772, 705 |
| ____742 Advanced Electrical Project (2) | elective, 743 |
| ____743 Intermediate Electrical Laboratory (1) | 709, 712, 741 |
| ____[3] Electives. Electrical Engr | Refer to Course Descriptions |
| **Seminar:** 6 Credits: | |
| ____804 Engineering Design Seminar | 743, Final Year |
| **Industrial Management:** 6 Credits: | |
| ____901 Industrial Management | 403 |
| ____902 Engineering Economy | 105, 403 |

**TOTAL** Degree Credit Requirements: **138** Credits

1994-1995 ASSOCIATE IN ENGINEERING DEGREE

# Electrical Engineering

## Recommended Program of Study

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*

| SEMESTER | FIRST YEAR | SECOND YEAR | THIRD YEAR |
|---|---|---|---|
| FIRST | 104 Calculus I<br>311 Engineering Graphics-CAD I (4)<br>401 English I | 601 Statics<br>107 Differential Equations<br>503 Physics- Electricity | 705 Electron Devices and Applications<br>403 Economics<br>206 Engineering Materials |
| SECOND | 105 Calculus II<br>201 Chemistry I<br>501 Physics-Mechanics | 771 Circuit Analysis I<br>202 Chemistry II<br>119 Computer Science I | 402 English II<br>120 Computer Science II or*<br>901 Industrial Management<br>741 Electrical Laboratory (1) |
| THIRD | 106 Calculus III<br>502 Physics-Heat, Light, Sound | HI 30 Foundations of Modernization<br>773 Circuit Analysis II | 732 Digital Electronics<br>111 Advanced Mathematics |

* Students planning to continue a BS program should take 120

All courses 3 credit hours except as indicated in parenthesis.

## For Students Requiring Additional Preparation

**The Preparatory Year**

BEI recognizes that some entering students have limited background in the fundamentals necessary to undertake the engineering program. To that end a series of courses are offered to better prepare the student for the intensive program that follows.

The courses most often needed for additional preparation are in mathematics. Three very critical courses (math 1101, 1102, 103) should be taken before the student begins the calculus sequence. In addition to the mathematics preparation familiarization with the personal computer is a necessity and an introductory course (CS 117) is required of those who have not experienced a programming language or interfacing with the computer.

These courses must be taken by all students that cannot demonstrate proficiency In these disciplines. The courses may be waived after review by the counselor and department chairperson Credit exams may also provide for the waiving of specific courses.

### Preparatory Year

**First Semester**

1101 Introduction to College Algebra (6)

*401 English I

**Second Semester**

1102 College Algebra (6)

117 Introduction to Computers

**Third Semester**

103 College Algebra and Trigonometry

* Strongly recommended

1994-1995 ASSOCIATE IN ENGINEERING DEGREE

# Electrical Engineering

## Tabulation of Degree Requirements

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*

| PREPARATORY PROGRAM (see Recommended Program for description) | PREREQUISITE |
|---|---|
| ____1101 Introduction to College Algebra (6) | — |
| ____1102 College Algebra (6) | 1101 |
| ____103 College Algebra and Trigonometry | 1102 |
| ____117 Introduction to Computers | — |

| REQUIRED COURSES | PREREQUISITE |
|---|---|
| **Mathematics**: 15 Credits: | |
| ____104 Calculus I | Precalculus, trig, or 103 |
| ____105 Calculus II | 104 |
| ____106 Calculus III | 105 |
| ____107 Differential Equations | 106 |
| ____111 Advanced Mathematics | 107 |
| **Computer Science**: 3 Credits: | |
| ____119 Computer Science I | 106, Basic Computer or 117 |
| ____120 Computer Science II | 119 |
| **Chemistry and Materials**: 9 Credits: | |
| ____201 Chemistry I | Algebra or 1101 |
| ____202 Chemistry II | 201 |
| ____206 Engineering Materials | 202 |
| **Engineering Graphics**: 4 Credits: | |
| ____311 Engineering Graphics CAD I (4) | |
| **Liberal Arts**: 12 Credits: | |
| ____401 English I | |
| ____402 English II | 401 |
| ____403 Economics | 401 |
| ____HI 30 Foundations of Modernization | |

*(Continued on next page)*

## Required Courses for Electrical Engineering (cont.)

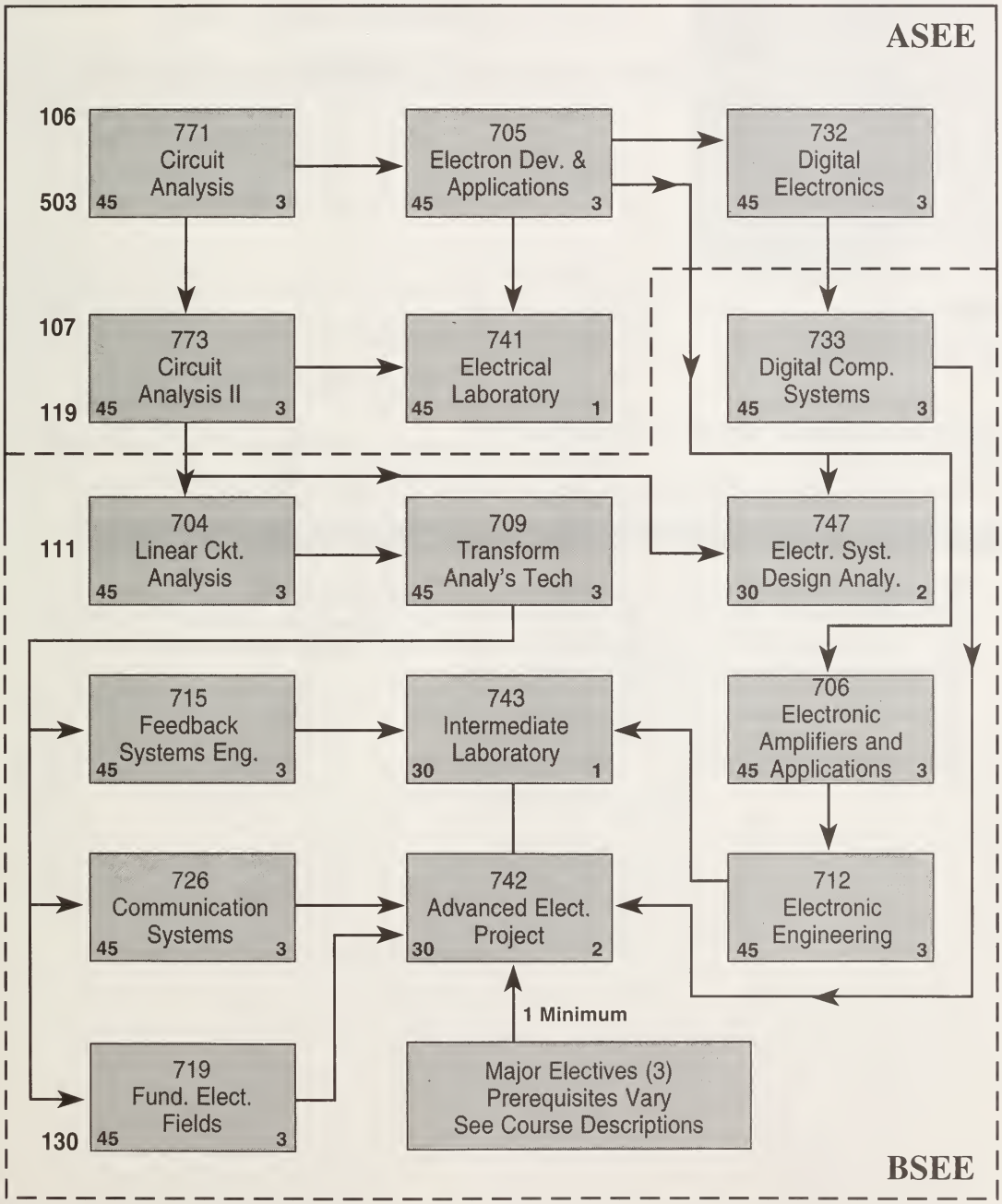
| REQUIRED COURSES | PREREQUISITE |
|---|---|
| **Physics**: 9 Credits: | |
| ____501 Physics-Mechanics | 105 |
| ____502 Physics-Heat, Light, Sound | 501 |
| ____503 Physics-Electricity | 106, 502 |
| **Mechanical Engineering**: 3 Credits: | |
| ____601 Statics | 104, 501, 311 |
| **Electrical Engineering**: 13 Credits: | |
| ____771 Circuit Analysis 1 | 106, 503 |
| ____773 Circuit Analysis II | 771, 119, 107 |
| ____705 Electron Devices and Applications | 771 |
| ____732 Digital Electronics | 705 |
| ____741 Electrical Laboratory(1) | 773, 705 |
| **Industrial Management**: 3 Credits: | |
| ____901 Industrial Management or | 403 |

**TOTAL** Degree Credit Requirements: **71** Credits (does not include preparatory program)
NOTE: 901 or 120 may be elected.

# 1994-95 Electrical Engineering Course Progression

For major elective prerequisites, see course descriptions

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*



# Information Systems Engineering

**Mark Ramsey**
Chairman Information
Systems Engineering

The Information Systems Engineer w/ill be educated in the disciplines of:

- **Information Science:** Defined as the collection, classification, storage, retrieval and dissemination of knowledge.
- **Information Theory:** Defined as a theory that deals statistically with information, the measurement of its content in terms of its distinguishing essential characteristics or by the number of alternatives from which it makes a choice possible, and with the efficiency of processes of communication between men and machines (as in telecommunications or in computing machines).
- **Telecommunications:** As it pertains to network systems hardware and software, intelligent and/or dumb terminals, locally or remotely connected via coaxial or fibre optic cable, and LAN and WAN Network operating protocols.
- **Digital Electronics:** It is expected that all information, be it Alpha/Numeric Data or Audio/Video signals will be communicated in digital form thus mandating a solid foundation in digital electronics and coding theory.
- **Multimedia Technologies**

## Faculty

**Mark Ramsey,** *Assistant Professor & Chairman*

**Robert A. Castrignano,** *Associate Professor*
**Karen Hills,** *Associate Professor*
**Harvey Hoffman,** *Professor*
**Joseph W. Ianniello,** *Instructor*
**Thomas Mannino,** *Instructor*
**Lawrence J. Reed,** *Instructor*
**Richard Siddall,** *Instructor*
**Earl Whiskeyman,** *Instructor*
**Robert E. Wisnieff,** *Professor*

1994-1995 BACHELOR OF SCIENCE DEGREE

# Information Systems Engineering

## Recommended Program of Study

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*

| SEMESTER | FIRST YEAR | SECOND YEAR | THIRD YEAR |
|---|---|---|---|
| FIRST | 104 Calculus I<br>311 Engineering Graphics<br>401 English I | 119 Computer Science I<br>107 Differential Equations<br>503 Physics- Electrical | 705 Electron Devices and Applications<br>704 Linear Circuit Analysis<br>201 Chemistry I |
| SECOND | 105 Calculus II<br>402 English II<br>501 Physics-Mechanical | 771 Circuit Analysis I<br>111 Advanced Mathematics<br>125 Intro. to SW Des. w/C | 709 Transform Analysis<br>355 Data Base Management<br>741 Electrical Laboratory (1) |
| THIRD | 106 Calculus III<br>502 Physics- Heat, Light, Sound | HI 30 Foundations of Modernization<br>773 Circuit Analysis II | — Fine Arts Elective<br>732 Digital Electronics |

| SEMESTER | FOURTH YEAR | FIFTH YEAR | SIXTH YEAR |
|---|---|---|---|
| FIRST | 715 FB Contr. Syst.<br>403 Economics<br>350 Intro to Info Sys. | 109 Prob. & Statistics<br>123 Computer Arch. I<br>204 Engineering Materials | 902 Engineering Economy<br>122 Simulation Techniques<br>— Elective |
| SECOND | 131 Analytical Methods<br>901 Industrial Management<br>380 Software Eng. Techniques | 620 Thermal Engrg. Systems<br>124 Operating Systems<br>360 Communication Networks | 126 Computer Arch. 2<br>726 Communic. Systems<br>385 Systems Engineering |
| THIRD | 381 Software Engrg. Practices<br>733 Digital Comp. Systems | — Religious Studies Elective<br>390 Computer Apps. Lab (1) | — History Elective<br>392 Senior Project |

All courses 3 credit hours except as indicated in parenthesis.

1994-1995 BACHELOR OF SCIENCE DEGREE

# Information Systems Engineering

## Tabulation of Degree Requirements

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*

| REQUIRED COURSES | PREREQUISITE |
|---|---|
| **Mathematics**: 21 Credits | |
| ____104 Calculus I | PreCalc, Trig, or 103 |
| ____105 Calculus II | 104 |
| ____106 Calculus III | 105 |
| ____107 Differential Equations | 106 |
| ____111 Advanced Mathematics | 107 |
| ____109 Probability and Statistics | 105 |
| ____131 Analytical Methods | 111 |
| **Computer Science**: 18 Credits | |
| ____119 Computer Science I | 106 and Basic or 108 |
| ____125 Software Design with C | 119 |
| ____123 Computer Architecture I | 733 |
| ____126 Computer Architecture II | 123 |
| ____124 Operating Systems | 123 |
| ____122 Simulation Techniques | 107, 109, 125 |
| **Chemistry**: 3 Credits | |
| ____201 Chemistry I | |
| **Engineering Graphics**: 4 Credits | |
| ____311 Engineering Graphics/CAD I (4 credits) | |
| **Information Systems Engineering**: 25 Credits | |
| ____350 Intro to Information Syst Engr. | 125 |
| ____355 Database Management Systems | 125 |
| ____360 Communication Networks | 350, 733 |
| ____380 Software Engineering Techniques | 355 |
| ____381 Software Engineering Practices | 355 |
| ____385 Systems Engineering | 360, 380 |
| ____390 Computer Applications Lab (1 credit) | 360 |
| ____392 Senior Project | 385 |
| ____Elective | |

*(Continued on next page)*

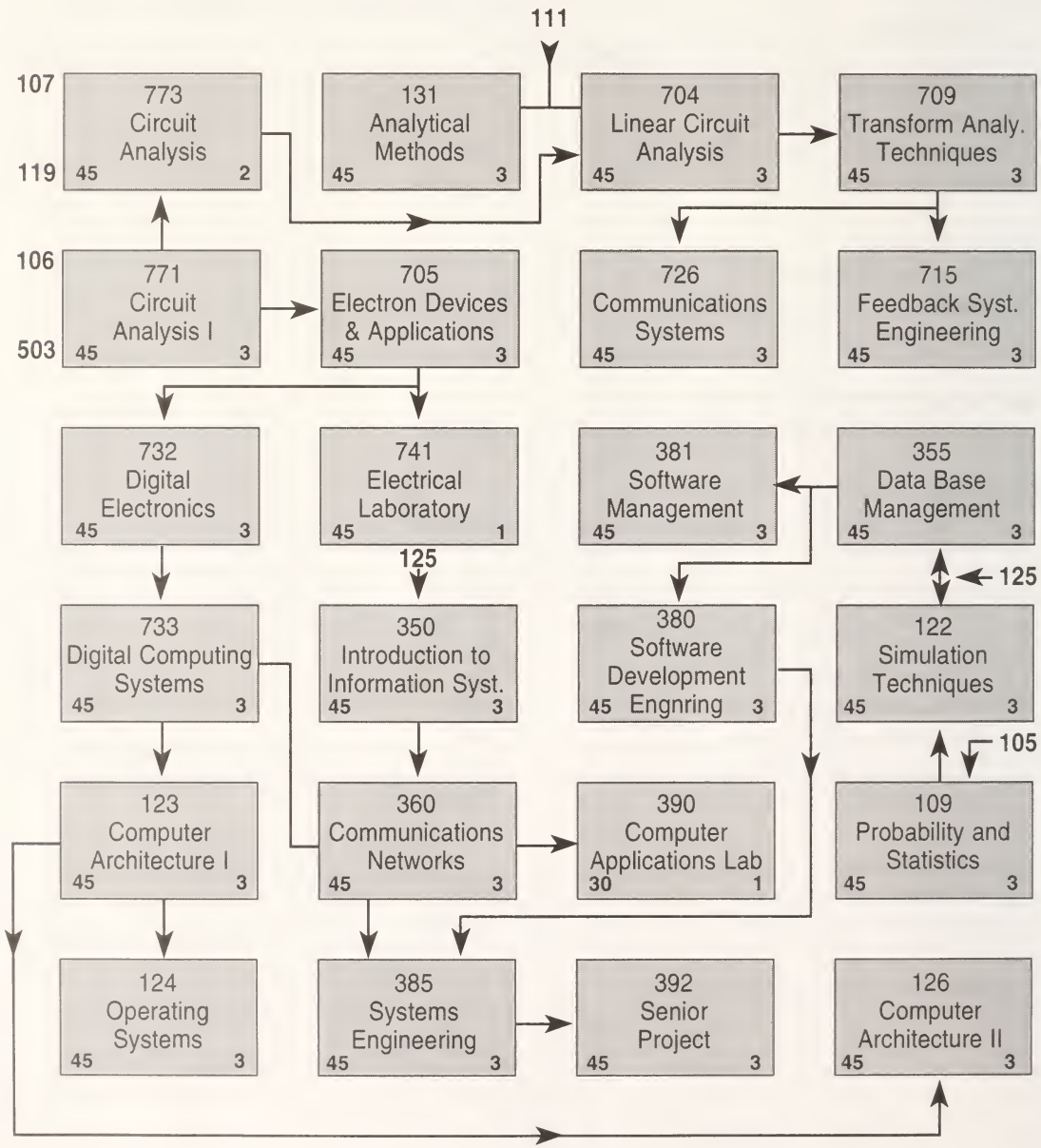
# Required Courses for Information Systems Engineering (cont.)

| REQUIRED COURSES | PREREQUISITE |
|---|---|
| **Liberal Arts**: 21 Credits | |
| ____401 English I | |
| ____402 English II | 401 |
| ____403 Economics | 401 |
| ____HI 30 Foundations of Modernization | |
| ____Religious Studies Elective | |
| ____American History Elective | 401 |
| ____Fine Arts Elective | |
| **Physics**: 9 Credits | |
| ____501 Physics Mechanics | |
| ____502 Physics Heat Light Sound | |
| ____503 Physics Electrical | |
| **Mechanical Engineering**: 3 Credits | |
| ____620 Thermal Engineering | 107, 502 |
| **Electrical Engineering**: 28 Credits | |
| ____771 Circuit Analysis I | 106, 503 |
| ____773 Circuit Analysis II | 771, 107, 119 |
| ____704 Linear Circuit Analysis | 772, 111 |
| ____705 Electron Devices | 771 |
| ____732 Digital Electronics | 705 |
| ____709 Transform Analysis | 704 |
| ____715 Feedback Control Systems | 709 |
| ____726 Communication Systems | 709 |
| ____733 Digital Computing Systems | 732 |
| ____741 Electrical Laboratory (1 credit) | 705, 772 |
| **Industrial Management**: 6 Credits | |
| ____901 Industrial Management | 403 |
| ____902 Engineering Economy | 105, 403 |

**TOTAL** Degree Credit Requirements: **138**

# 1994-1995 Information Systems Engineering Course Progression

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*



SPECIAL PROGRAM FEATURES

# Information Systems Engineering

**A. Advanced Standing**
It is anticipated that the majority of prospective students for the ISE program will have completed significant college level work at other institutions The transferability of courses and degrees from other institutions will have to be decided on an individual basis. In most cases, course titles will clearly correspond to BEI titles and transfer credit for recently completed courses with C or better will be decided expeditiously.

It is also expected that prospective students will present a very broad range of background, work experience as well as academic. Thus no one recommended program for completing degree requirements will suffice. The following example is offered to illustrate one of the many possibilities.

EXAMPLE Minimum degree requirements for a student with a recent typical B.S. in Electrical Engineering (maximum transferable credits).

| REQUIRED COURSES | PREREQUISITE |
|---|---|
| **Information Systems Engineering**: 22 Credits | |
| ____355 Database Management Systems | 125 |
| ____360 Communication Networks | 726 |
| ____380 Software Engineering Techniques | 355 |
| ____381 Software Engineering Practices | 355 |
| ____385 Systems Engineering | 360 |
| ____390 Computer Application Lab (1 credit) | 360 |
| ____395 Senior Project | 390 |
| **Computer Science**: 15 Credits | |
| ____123 Computer Architecture I | 733 |
| ____126 Computer Architecture II | 123 |
| ____124 Operating Systems | 123 |
| ____122 Simulation Techniques | 107, 109, 125 |
| ____125 Software Design with C | 119 |

**TOTAL** Degree Requirements **37** Credits

**B. Program Segments** (Sub sets of the total program)
Many prospective students are interested in completing only an identifiable portion of the full degree program, not wishing to complete all the degree requirements. Such students usually have accomplished considerable college work and even attained advanced degrees. There are a great number of possible entry points, and a wide range of options, short sequence of courses that can be selected from the ISE program, keeping in mind necessary prerequisites for each course.

EXAMPLE Computer systems background looking at Information Systems Engineering
350—Introduction to Information Systems
355—Database Management
360—Communication Networks
380—Software Development Engineering
381—Software Management Engineering
385—Systems Engineering

# Manufacturing Engineering, Industrial Management, and Materials

**Albert Madwed**
Chairman Manufacturing
Engineering Department

## Faculty

**Albert Madwed,** *Chairman & Associate Professor*
**Paul P. Botosani,** *Vice Chairman & Professor*
**Richard Kurczewski,** *Vice Chairman & Assistant Professor*

**Philip D. Cracco.** *Instructor*
**John B. Davis,** *Instructor*
**Kenneth C. Hancock,** *Professor*
**James R. Savage,** *Instructor*
**Howard W. Shelnitz,** *Instructor*
**Stephen H. Silder,** *Associate Professor*

The Manufacturing Engineering Department was organized in 1987 with 5 courses to provide an option to the Mechanical Engineering Program. The Industrial Management Department was combined with the Manufacturing Engineering Department in 1988. These new courses 851, 852, 853, 854, 855 plus the BEI courses in Industrial Management 901, 902, 915 and the 803, 804 seminar program offer an excellent program for the Manufacturing Engineering option. Many engineering schools have started manufacturing engineering programs since 1985. The BEI Manufacturing and Robotic Laboratory has modern equipment including robots, computers and modern programmable controllers. Dr Paul P. Botosani and Richard V. Kurczewski are Assistant Chairmen of the Manufacturing Engineering and Industrial Management Departments respectively. The combined department is assisted by an able staff of industrial professionals who have had many years of experience teaching at BEI.

1994-1995 BACHELOR OF SCIENCE DEGREE

# Manufacturing Engineering

## Recommended Program of Study

**(Option in Mechanical Engineering) First, Second and Third Year Same as Mechanical Engineering**

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*

| SEMESTER | FOURTH YEAR | FIFTH YEAR | SIXTHYEAR |
|---|---|---|---|
| FIRST | 607 Thermodynamics I<br>403 Economics<br>609 Mechanical Vibrations | 705 Electron Devices & Applications<br>611 Machine Design<br>610 Fluid Mechanics | 902 Engineering Economy<br>804 Engineering Seminar†<br>206 Engineering Materials |
| SECOND | 771 Electrical Circuits I<br>901 Industrial Management<br>608 Thermodynamics II | 616 Heat Transfer<br>852 Manufacturing Systems II<br>627 M.E. Laboratory II Engerey Systems (1) | 854 Product and Process Design and Manufacturing<br>804 Engineering Seminar†<br>855 Product Planning, Control and Forecasting |
| THIRD | — Elective (History)<br>851 Manufacturing Systems I | 853 Manufacturing Processes and Materials<br>766 Introduction to Electrical Systems (2) | 746 Basic Electrical Laboratory (1)<br>— Religious Studies Elective |

All courses 3 credit hours except as indicated in parenthesis.

† Engineering Seminar 804 is presented during Semester 1 and 2 of the sixth year.

1994-1995 BACHELOR OF SCIENCE DEGREE

# Manufacturing Engineering

## Tabulation of Degree Requirements

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*

| REQUIRED COURSES | PREREQUISITE |
|---|---|

**Mathematics**: 18 Credits:

| | |
|---|---|
| ____104 Calculus I | Precalculus, trig, or 103 |
| ____105 Calculus II | 104 |
| ____106 Calculus III | 105 |
| ____107 Differential Equations | 106 |
| ____111 Advanced Mathematics | 107 |
| ____131 Analytical Methods | 111 |

**Computer Science**: 6 Credits:

| | |
|---|---|
| ____119 Computer Science I | 106, Basic Computer or 118 |
| ____120 Computer Science II | 111 |

**Chemistry and Materials**: 9 Credits:

| | |
|---|---|
| ____201 Chemistry I | Algebra or 1101 |
| ____202 Chemistry II | 201 |
| ____206 Engineering Materials | 202 |

**Engineering Graphics**: 8 Credits:

| | |
|---|---|
| ____311 Engineering Graphics CAD I (4) | |
| ____312 Engineering Graphics CAD II (4) | 310 or 311 |

**Liberal Arts**: 21 Credits:

| | |
|---|---|
| ____401 English I | |
| ____402 English II | 401 |
| ____403 Economics | 401 |
| ____HI 30 Foundations of Modernization | |
| ____Religious Study Elective | |
| ____History Elective | |
| ____Fine Arts Elective | |

**Physics**: 9 Credits:

| | |
|---|---|
| ____501 Physics-Mechanics | 105 |
| ____502 Physics-Heat, Light, Sound | 501 |
| ____503 Physics-Electricity | 106, 502 |

*(Continued on next page)*

# Required Courses for Manufacturing Engineering (cont.)

| REQUIRED COURSES | PREREQUISITE |
|---|---|
| **Mechanical Engineering**: 32 Credits: | |
| ____601 Statics | 104, 501, 311 |
| ____602 Dynamics | 105, 601 |
| ____603 Kinematics | 105, 312, 602 |
| ____605 Strength of Materials I | 120, 601 |
| ____606 Strength of Materials II | 605 |
| ____607 Thermodynamics I | 107, 502 |
| ____608 Thermodynamics II | 607 |
| ____609 Mechanical Vibrations | 111, 120, 603 |
| ____610 Fluid Mechanics | 601, 607 |
| ____611 Machine Design | 603, 606 |
| ____616 Heat Transfer | 120, 502, 607, 610 |
| ____624 Mechanical Engineering Laboratory I— Mechanical Systems (1) | 501, 603, 606 |
| ____627 Mechanical Engineering Laboratory II— Energy Systems (1) | 624, 608, 609, 610 |
| **Electrical Engineering**: 9 Credits: | |
| ____705 Electron Devices and Applications | 771 |
| ____746 Basic Electric Laboratory (1) | 705 |
| ____766 Introduction to Electrical Systems (2) | 705 |
| ____771 Circuit Analysis | 106, 503 |
| **Manufacturing Engineering**: 15 Credits: | |
| ____851 Manufacturing Systems I | |
| ____852 Manufacturing Systems II | 851 |
| ____853 Manufacturing Processes and Materials | |
| ____854 Product and Process Design for Manufacturing | |
| ____855 Product Planning, Control and Forecasting | |
| **Seminar**: 6 Credits: | |
| ____804 Engineering Design Seminar | 627, Final Year |
| **Industrial Management**: 6 Credits: | |
| ____901 Industrial Management | 403 |
| ____902 Engineering Economy | 105, 403 |

**TOTAL** Degree Credit Requirements: **139** Credits

# Mechanical Engineering

**Alan Dubrow**
*Chairman, Mechanical Engineering Department*

As advances in both technology and education continue, the Mechanical Engineering courses and curriculum at BEI are enhanced to ensure that they support the needs of the Mechanical Engineering student and accelerate his/her progress in the discipline. As a result, the BEI Mechanical Engineering graduate is employable in a great diversity of jobs.

The major program of study at BEI leads to the Bachelor of Science Degree in Mechanical Engineering. However, the student can earn an Associate in Engineering Degree by completing the Mathematics, Science and Basic Engineering Science portion of the BS program.

The Mechanical Engineering Department at BEI provides the student with faculty that are not only experienced teachers, but who also are current in the latest technology practiced in industry The students benefit from this well-rounded approach.

The Mechanical Engineering lecture courses include design projects and both computer and laboratory experience.

## Faculty

**Alan Dubrow,** *Chairman & Professor*

**Clement L. Anekwe,** *Associate Professor*
**Avi Ben-Porat,** *Senior Instructor*
**Jovan D. Boskovic,** *Assistant Professor*
**Paul J. Botosani,** *Professor*
**Eban Cobb,** *Associate Professor*
**Yew-Tsung Chen,** *Associate Professor*
**Leon Feigin,** *Assistant Professor*
**Jay Hoffman,** *Assistant Professor*
**David H. Hunter,** *Senior Instructor*
**Vedanth Kadambi,** *Professor*
**Walter J. Kulpa,** *Assistant Professor*
**Everett P. Loppacker,** *Instructor*
**Peter M. Moanfeldt,** *Professor*
**Marvin J. Parnes,** *Associate Professor*
**W. Charles Paulsen,** *Professor*
**Patrick Rooney,** *Senior Instructor*
**Jacob C. Rubin,** *Associate Professor*
**Richard G. Weber,** *Professor*
**Clifford A. Wojan,** *Professor*
**Donald E. Woodbridge,** *Instructor*

1994-1995 BACHELOR OF SCIENCE DEGREE

# Mechanical Engineering

## Recommended Program of Study

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*

| SEMESTER | FIRST YEAR | SECOND YEAR | THIRD YEAR |
|---|---|---|---|
| FIRST | 104 Calculus I<br>311 Engineering Graphics—CAD I (4)<br>401 English I | 601 Statics<br>107 Differential Equations<br>503 Physics- Electrical | 603 Kinematics<br>605 Strength of Materials<br>201 Chemistry I |
| SECOND | 105 Calculus II<br>402 English II<br>501 Physics-Mechanics | 602 Dynamics<br>111 Advanced Mathematics<br>119 Computer Science I | 120 Computer Science II<br>202 Chemistry II<br>606 Strength of Materials II |
| THIRD | 106 Calculus III<br>502 Physics- Heat, Light, Sound | — Religious Studies Elective<br>312 Engineering Graphics—CAD II (4) | 131 Analytical Methods<br>624 M.E. Laboratory I—Mechanical Systems (1) |

| SEMESTER | FOURTH YEAR | FIFTH YEAR | SIXTH YEAR |
|---|---|---|---|
| FIRST | 607 Thermodynamics I<br>403 Economics<br>609 Mechanical Vibrations | 705 Electron Devices & Applications<br>611 Machine Design<br>610 Fluid Mechanics | 902 Engineering Economy<br>804 Engineering Seminar†<br>206 Engineering Materials |
| SECOND | 771 Electrical Circuits I<br>901 Industrial Management<br>608 Thermodynamics II | 616 Heat Transfer<br>612 Advanced Machine Design<br>627 M.E. Laboratory II Energy Systems (1) | 207 Adv. Engineering Materials<br>804 Engineering Seminar†<br>— Elective (Major) |
| THIRD | — Elective (Fine Arts)<br>HI 30 Foundations of Modernization | — Elective (Major)<br>766 Introduction to Electrical Systems (2)<br>746 Basic Electrical Lab. | — Elective (American History) |

All courses 3 credit hours except as indicated in parenthesis.

† Engineering Seminar 804 is recommended for Semester 1 and 2 of the student's final year. Credit 6 semester hours.

1994-1995 BACHELOR OF SCIENCE DEGREE

# Mechanical Engineering

## Tabulation of Degree Requirements

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*

| REQUIRED COURSES | PREREQUISITE |
|---|---|
| **Mathematics**: 18 Credits: | |
| ____104 Calculus I | Precalculus, trig, or 103 |
| ____105 Calculus II | 104 |
| ____106 Calculus III | 105 |
| ____107 Differential Equations | 106 |
| ____111 Advanced Mathematics | 107 |
| ____131 Analytical Methods for Mechanical Engineers | 111 |
| **Computer Science**: 6 Credits: | |
| ____119 Computer Science I | 106, Basic Computer or 118 |
| ____120 Computer Science II | 111 |
| **Chemistry and Materials**: 12 Credits: | |
| ____201 Chemistry I | Algebra or 1101 |
| ____202 Chemistry II | 201 |
| ____206 Engineering Materials | 202 |
| ____207 Adv Engineering Materials | 206 |
| **Engineering Graphics**: 8 Credits: | |
| ____311 Engineering Graphics CAD I | |
| ____312 Engineering Graphics CAD II | 310 or 311 |
| **Liberal Arts**: 21 Credits: | |
| ____401 English I | |
| ____402 English II | 401 |
| ____403 Economics | 401 |
| ____HI 30 Foundations of Modernization | |
| ____Religious Studies Elective | |
| ____American History Elective | |
| ____Fine Arts Elective | |

*(Continued on next page)*

## Required Courses for Mechanical Engineering (cont.)

| REQUIRED COURSES | PREREQUISITE |
|---|---|
| **Physics**: 9 Credits: | |
| ____501 Physics-Mechanics | 105 |
| ____502 Physics-Heat, Light, Sound | 501 |
| ____503 Physics-Electricity | 106, 502 |
| **Mechanical Engineering**: 44 Credits: | |
| ____601 Statics | 104, 501, 311 |
| ____602 Dynamics | 105, 601 |
| ____603 Kinematics | 119, 312, 602 |
| ____605 Strength of Materials I | 601 |
| ____606 Strength of Materials II | 605 |
| ____607 Thermodynamics I | 107, 502 |
| ____608 Thermodynamics II | 607 |
| ____609 Mechanical Vibrations | 131, 120, 603 |
| ____610 Fluid Mechanics | 601, 607 |
| ____611 Machine Design | 603, 606 |
| ____612 Advanced Machine Design | 609, 611 |
| ____616 Heat Transfer | 120, 502, 607, 610 |
| ____624 Mechanical Engineering Laboratory I— Mechanical Systems (1) | 501, 603, 606 |
| ____627 Mechanical Engineering Laboratory II— Energy Systems (1) | 624, 608, 609, 610 |
| ____[2] Electives, Mech. Engr | Refer to Course Descriptions |
| **Electrical Engineering**: 9 Credits: | |
| ____705 Electron Devices and Applications | 771 |
| ____746 Basic Electric Laboratory (1) | 705 |
| ____766 Introduction to Electrical Systems (2) | 705 |
| ____771 Circuit Analysis 1 | 106, 503 |
| **Seminar**: 6 Credits: | |
| ____804 Engineering Design Seminar | 627, Final Year |
| **Industrial Management**: 6 Credits: | |
| ____901 Industrial Management | 403 |
| ____902 Engineering Economy | 105, 403 |

**TOTAL** Degree Credit Requirements: **139** Credits

1994-1995 ASSOCIATE IN ENGINEERING DEGREE

# Mechanical Engineering

## Recommended Program of Study

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*

| SEMESTER | FIRST YEAR | SECOND YEAR | THIRD YEAR |
|---|---|---|---|
| FIRST | 104 Calculus I<br>311 Engineering Graphics—CAD I (4)<br>401 English I | 601 Statics<br>107 Differential Equations<br>201 Chemistry I | 603 Kinematics<br>605 Strength of Materials<br>503 Physic—Electricity |
| SECOND | 105 Calculus II<br>402 English II<br>501 Physics-Mechanics | 602 Dynamics<br>202 Chemistry II<br>119 Computer Science I | 771 Circuit Analysis I<br>901 Industrial Management<br>606 Strength of Materials II |
| THIRD | 106 Calculus III<br>502 Physics- Heat, Light, Sound | HI 30 Foundations of Modernization<br>312 Engineering Graphics—CAD II (4) | 206 Engineering Materials<br>624 M.E. Laboratory I—Mechanical Systems (1) |

All courses 3 credit hours except as indicated in parenthesis.

## For Students Requiring Additional Preparation

**The Preparatory Year**

The BEI School of Engineering recognizes that some entering students have limited back ground in the fundamentals necessary to undertake the engineering program. To that end, a series of courses are offered to better prepare the student for the intensive program that follows.

The courses most often needed for additional preparation are in mathematics Three very critical courses (math 1101, 1102, 103) should be taken before the student begins the calculus sequence In addition to the mathematics preparation, familiarization with the personal computer is a necessity and an introductory course (CS 117) is required of those who have not experienced a programming language or interfacing with the computer.

These courses must be taken by all students that cannot demonstrate proficiency in these disciplines. The courses may be waived after review by the counselor and department chairperson Credit exams may also provide for the waiving of specific courses.

### Preparatory Year

**First Semester**
1101 Introduction to College Algebra (6)
*401 English I

**Second Semester**
1102 College Algebra (6)
117 Introduction to Computers

**Third Semester**
103 College Algebra and Trigonometry

* Strongly recommended

1994-1995 ASSOCIATE IN ENGINEERING DEGREE

# Mechanical Engineering

## Tabulation of Degree Requirements

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*

| PREPARATORY PROGRAM (see Recommended Program for description) | PREREQUISITE |
|---|---|
| ____1101 Introduction to College Algebra (6) | — |
| ____1102 College Algebra (6) | 1101 |
| ____103 College Algebra and Trigonometry | 1102 |
| ____117 Introduction to Computers | — |

| REQUIRED COURSES | PREREQUISITE |
|---|---|
| **Mathematics**: 9 Credits: | |
| ____104 Calculus I | Precalculus, trig, or 103 |
| ____105 Calculus II | 104 |
| ____106 Calculus III | 105 |
| **Computer Science**: 3 Credits: | |
| ____119 Computer Science I | 106, Basic Computer or 117 |
| **Chemistry and Materials**: 9 Credits: | |
| ____201 Chemistry I | Algebra or 1101 |
| ____202 Chemistry II | 201 |
| ____206 Engineering Materials | 202 |
| **Engineering Graphics**: 8 Credits: | |
| ____311 Engineering Graphics CAD I | |
| ____312 Engineering Graphics CAD II | 310 or 311 |
| **Liberal Arts**: 12 Credits: | |
| ____401 English I | |
| ____402 English II | 401 |
| ____403 Economics | 401 |
| ____HI 30 Foundation of Modernization | |

*(Continued on next page)*

## Required Courses for Associate Mechanical Engineering (cont.)

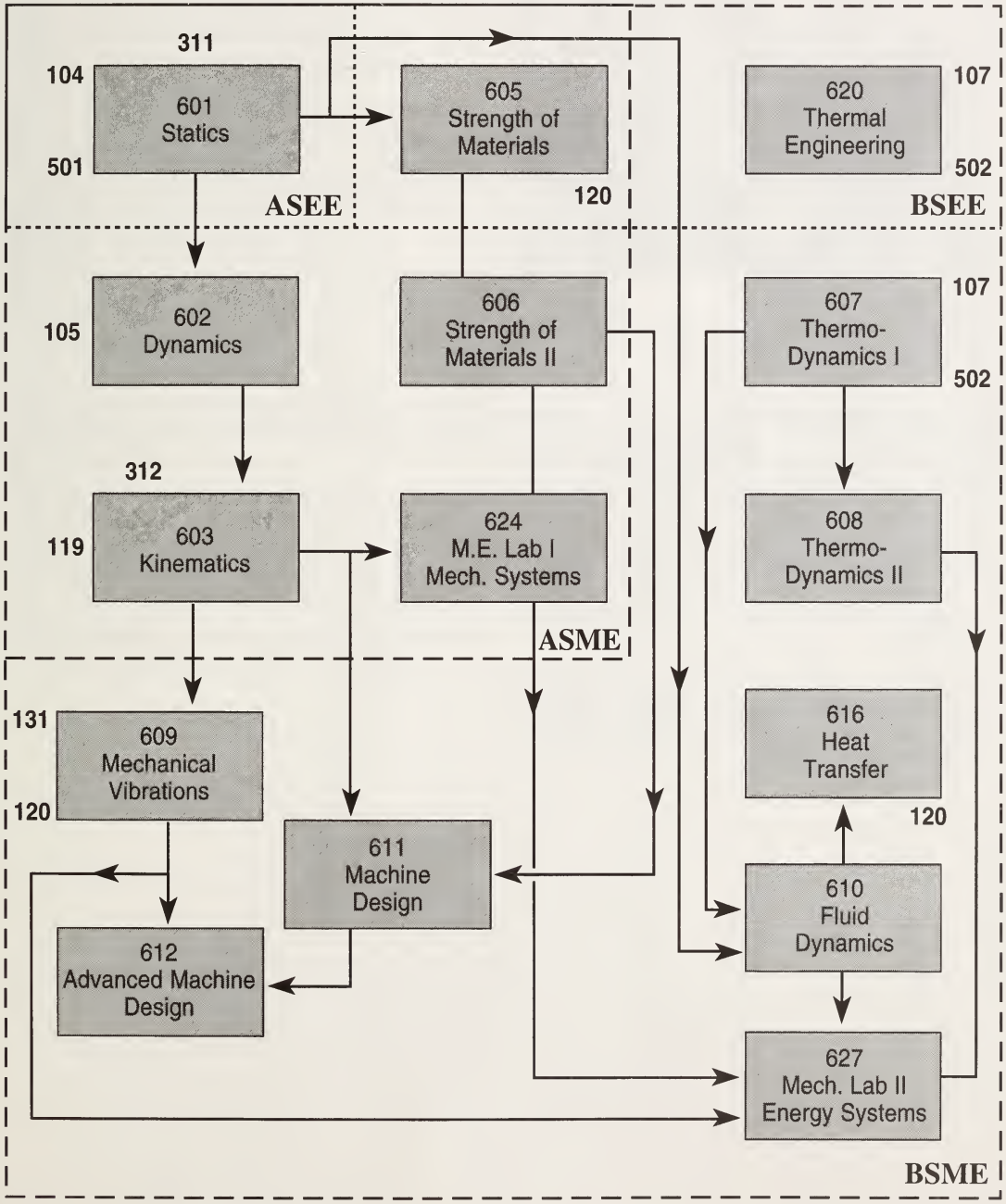
| REQUIRED COURSES | PREREQUISITE |
|---|---|
| **Physics**: 9 Credits: | |
| ____501 Physics-Mechanics | 105 |
| ____502 Physics-Heat, Light, Sound | 501 |
| ____503 Physics-Electricity | 106, 502 |
| **Mechanical Engineering**: 16 Credits: | |
| ____601 Statics | 104, 501, 311 |
| ____602 Dynamics | 105, 601 |
| ____603 Kinematics | 105, 312, 602 |
| ____605 Strength of Materials I | 601 |
| ____606 Strength of Materials II | 605 |
| ____624 Mechanical Engineering Lab I— Mechanical Systems (1) | 501, 603, 606 |
| **Electrical Engineering**: 3 Credits: | |
| ____771 Circuit Analysis I | 106, 503 |
| **Industrial Management**: 3 Credits: | |
| ____901 Industrial Management | 403 |

**TOTAL** Degree Credit Requirements **72** Credits (does not include—preparatory program)

# 1994-95 Mechanical Engineering Course Progression

For major elective prerequisites, see course descriptions.

*NOTE: Course numbers are old BEI numbers. Refer to Cross Reference Table for new Fairfield University numbers.*



# Computer Science Program


**Mark Ramsey**
Chairman, Information Systems Engineering
and Computer Science Department

During the decade of the 80's, the computer became an important tool to the engineer. The decade of the 90's will prove the computer an indispensable partner to the engineer. The Computer Science Program at BEI has responded to this increased role of the computer by increasing the number and types of courses offered as well as increasing the number of computers and computer labs. Our Faculty and staff are professionals working at the area's leading industries and universities.

The BEI Computer Science Program utilizes three computer laboratories, a computer engineering applications laboratory, the Information Systems Engineering laboratory and the CAD lab.

## Faculty

**Mark Ramsey,** *Chairman & Assistant Professor*
**J. David Sirade**, *Vice Chairman & Associate Professor*

**Paul M. Ibsen**, *Instructor*
**Thomas Mannino**, *Instructor*
**Raymond J. Metro**, *Instructor*
**R. Wayne Raulerson**, *Instructor*
**Richard Siddall,** *Instructor*

# Engineering Graphics/CAD Program

**Felice P. Rizzo**
Chairman Engineering
Graphics Program

## Faculty

**Felice P. Rizzo,** *Chairman & Assistant Professor*

**Purnendu S. Baxi,** *Instructor*
**Joseph A. Benedetti,** *Instructor*
**Robert W. Brewczynski,** *Senior Instructor*
**Henry A. Cubberly,** *Instructor*
**Nicholas A. Mastrocinque,** *Senior Instructor*
**William Medalis,** *Instructor*
**Dean Muccio,** *Instructor*

These courses combine Manual Drafting Practices, Descriptive Geometry and the fundamentals of Computer Aided Drafting usage.

The student learns both basic drafting practices and CAD. Classes are kept small to allow for individual attention and the classes are taught by Engineering Professionals who have extensive experience in the field of Engineering Design and Manufacturing.

A well equipped CAD lab is available for individual instruction at all levels up to and including 3D.

# Engineering and Science Laboratories


The BEI Engineering and Science Laboratories have shown remarkable growth in the past few years. The Laboratories provide strong support to the Electrical Engineering, Mechanical Engineering, Manufacturing Engineering and Physics, Chemistry and Engineering Materials programs.

The BEI Engineering and Science Laboratories comprise six laboratories: Electrical, Mechanical, Robotics & Manufacturing, Information Systems Engineering, Physics and Chemistry. The Laboratories include modern equipment to greatly enhance the student's laboratory experience Every year 250-300 students participate in various activities in the BEI Labs.

Recent additions to the BEI labs include a refrigeration demonstration unit having computer interface for data acquisition, and a modern tensile testing system obtained as a result of a National Science Foundation Grant. Several personal computers, and a computer controlled instrumentation system utilizing an IEEE 488 bus system are provided for data acquisition and analysis. BEI is committed to a long term plan for the procurement of new and modern lab equipment.

## Faculty

**Dr. Richard Weber**, *Associate Dean and Professor*
**Dr. Paul Botosani**, *Principal Engineer and Professor*
**Joseph Hajla**, *Lab Associate, Physics Lab*
**Robert Wojna**, *Laboratory Engineer—Special Projects*

**Rudy Berndlmaier**, *Lab Associate, Chemistry Lab*
**Edward J. Corrella**, *Senior Lab Technician, Electrical Engineering Lab*

BEI Laboratories provide the student with strong practical and theoretical knowledge and assist in preparing the student for a successful engineering career.

# BEI Professional Development Programs

## The Professional Development Division

The Bridgeport Engineering Institute was founded in 1924, as an Evening College, to meet the science and engineering needs of the community. Two academic divisions were established: the Undergraduate Division, to offer programs leading to the Bachelor of Science Degree in either Electrical or Mechanical Engineering, and the Continuing Education Division, to offer Professional Development Certificate courses and Seminars designed to increase the skills of the working Engineer or Technician. In 1987 the name of the Division was changed to the Professional Development Division to more accurately reflect the type of course being offered.

Upon merger with Fairfield University Professional Development continues as a support program to the BEI School of Engineering.

## Program Objectives

Professional Development programs are designed to provide the attendee with State-of-the-Art developments in Engineering, Information Science and Computer Science technology. Courses, Seminars and Symposiums are generally offered as Certificate programs. Academic recognition for completion of a Certificate course is acknowledged by the award of a Certificate, plus CEU units.

Generally classes meet one evening a week, either at BEI or "On-site" at a negotiated industrial location.

Where the course content meets the criteria for undergraduate credit, the student is afforded the opportunity to request credit status.

## The Continuing Education Unit

The CEU (Continuing Educational Unit) concept provides individuals with a nationally established system of recognition for their efforts to update or broaden their knowledge or skill. One CEU is defined as ten contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction and qualified instruction.

*Don Adams, Sikorsky Aircraft Engineering Fellow 1992*

## Current and Recent Course Offerings

One of the most popular courses offered is the Professional Engineer Examination Review course. The objective of the review course is to prepare applicants to take the Connecticut State examination for licensure as a Professional Engineer

Other courses that have been offered are:

- Computer Aided Design and Drafting
- Introduction to Programmable Controllers
- Microprocessor based Robotics
- Robotics and the Automated Factory
- Geometric Tolerancing
- Telecommunications
- Fibre Optics
- Finite Element Analysis
- Strength of Composite Materials
- Environmental Compliance Regulations
- Machine Design
- Quality Control Technology

## In-Plant Courses

In-Plant courses are designed to provide training programs for companies wishing to expand the skills of their employees. BEI develops the course content and, in cooperation with the employer, provides the planning and staffing to run the course.

Typical In-Plant courses that have been offered are:

- Computer aided Design/Drafting
- Strength of Composite Materials and Structures
- Geometric Tolerancing
- Finite Element Analysis
- Statistical Process Control
- Fundamentals of CNC technology

**BEI WILL MEET THE NEED**

The Institute's Professional Development Staff welcomes suggestions for Courses and/or Seminars that may serve the educational needs of the community... Call, Associate Dean Weber, 255-2623.

## Professional Development Adjunct Faculty

**S. Baghai**
**R. Berndlmaier**
**D. Comiskey**
**F. DePonte**
**A. Farooqui**
**L. Feigin**
**H. Hoffman**
**V. Kadambi**
**N. Krebs**
**W. Kulpa**
**R. Kurczewski**
**R. Langanke**
**J. Laverriere**
**R. Pellegrini**
**C. Pizzo**
**M Ramsey**
**R.W. Raulerson**
**A. Sayani**
**R. Siddall**
**E. Wieczorek**

# Cross Reference Table for Course Numbers

| New Number | Old Number | Sub-specialty and Title |
|---|---|---|
| **ELECTRICAL ENGINEERING** | | |
| **Circuit Design and Analysis Techniques** | | |
| EE 210 | 771 | Circuit Analysis I |
| EE 211 | 773 | Circuit Analysis II |
| EE 220 | 704 | Linear Circuit Analysis |
| EE 224 | 111 | Advanced Engineering Mathematics |
| EE 245 | 732 | Digital Circuits |
| EE 290 | 766 | Introduction to Electrical Systems |
| EE 301 | 709 | Transform Analysis |
| EE 302 | 715 | Feedback Control Systems |
| EE 320 | 130 | Vector Analysis |
| EE 321 | 719 | Fundamentals of Electromagnetic Fields |
| **Systems Design and Analysis** | | |
| EE 304 | 716 | Digital Control Systems (Elective) |
| EE 345 | 733 | Digital Computing Systems |
| EE 350 | 726 | Communications Systems |
| EE 352 | 738 | Digital Communications Systems (Elective) |
| EE 325 | 718 | Microwave Systems Engineering (Elective) |
| EE 346 | 758 | Microprocessor Hardware Control Systems (Elective) |
| EE 354 | 761 | Electro-optical Data Communications Systems (Elective) |
| EE 360 | 735 | Electrical Machine Analysis (Elective) |
| EE 365 | 759 | Power Systems Analysis (Elective) |
| EE 370 | 740 | Instrumentation Systems Engineering (Elective |
| EE 375 | 747 | Elect. Syst. Des. Analysis |
| **Electronic Circuits and Devices** | | |
| EE 230 | 705 | Electron Devices & Appl. |
| EE 330 | 706 | Electron Device Models |
| EE 332 | 712 | Electronic Engineering |
| **Electrical and Electronic Laboratories** | | |
| EE 291 | 746 | Basic Electrical Laboratory |
| EE 280 | 741 | Electrical Laboratory |
| EE 380 | 743 | Interm. Electr. Laboratory |
| EE 382 | 742 | Advanced Electrical Project |

| New Number | Old Number | Sub-specialty and Title |
|---|---|---|

## ENGINEERING GRAPHICS AND CAD

CD 010 ..... 310 ..... Computer Aided Drafting (1 credit)
CD 111 ..... 321 ..... Technical Graphics—CAD I (3 credits)
CD 112 ..... 322 ..... Technical Graphics—CAD II (3 credits)
CD 211 ..... 311 ..... Engineering Graphics—CAD I (4 credits)
CD 212 ..... 312 ..... Engineering Graphics—CAD II (4 credits)
CD 213 ..... 313 ..... Graphics Science & Design (3D) (2 credits)
NOTE: BEI 301, 302 are no longer offered.

## INFORMATION SYSTEMS ENGINEERING AND COMPUTER SCIENCE

RM 117 ..... 117 ..... Computers and Engineering Applications (non-credit)
CS 131 ..... 119 ..... Computer Science I
CS 132 ..... 120 ..... Computer Science II (Fortran)
CS 133 ..... 125 ..... Software Design w/C
IC 209 ..... 109 ..... Probability and Statistics
IC 222 ..... 122 ..... Simulation Techniques
IC 227 ..... 127 ..... Object Oriented w/C++
IC 250 ..... 350 ..... Intro to Information Systems Engineering
CS 322 ..... 123 ..... Computer Architecture I
IC 326 ..... 126 ..... Computer Architecture II
CS 331 ..... 124 ..... Operating Systems
IC 355 ..... 355 ..... Database Management Systems
IC 360 ..... 360 ..... Communications Networks
IC 380 ..... 380 ..... Software Engineering Techniques
IC 381 ..... 381 ..... Software Engineering Practices
IC 385 ..... 385 ..... Systems Engineering
IC 390 ..... 390 ..... Computer Applications Lab
IC 392 ..... 392 ..... Senior Project

## MANUFACTURING, MATERIALS AND MANAGEMENT ENGINEERING

### Materials

MF 206 ..... 206 ..... Engineering Materials
MF 307 ..... 207 ..... Advanced Engineering Materials
MF 310 ..... 203 ..... Polymer Chemistry

### Manufacturing

MF 351 ..... 851 ..... Mfg. Systems I
MF 352 ..... 852 ..... Mfg. Systems II
MF 353 ..... 853 ..... Mfg. Processes and Materials
MF 354 ..... 854 ..... Product & Process Design for Mfg.
MF 355 ..... 855 ..... Product Planning Control and Forecasting

| New Number | Old Number | Sub-specialty and Title |
|---|---|---|

## MANUFACTURING, MATERIALS AND MANAGEMENT ENGINEERING (continued)

### Management

| | | |
|---|---|---|
| MF 371 | 901 | Industrial Management |
| BEI 902 | 902 | Engineering Economy |
| BEI 915 | 915 | Business Law I/Engineering |
| MF 385 | 917 | Environmental Law (Elective) |
| MF 390 | 804 | Engineering Design Seminar |

## MECHANICAL ENGINEERING

### Solid Mechanics

| | | |
|---|---|---|
| ME 201 | 601 | Statics |
| ME 202 | 602 | Dynamics |
| ME 203 | 603 | Kinematics |
| ME 205 | 605 | Strength of Materials I |
| ME 306 | 606 | Strength of Materials II |
| ME 308 | 624 | ME Lab I — Mechanical Systems |
| ME 309 | 609 | Vibrations |
| ME 311 | 611 | Machine Design I |
| ME 312 | 612 | Machine Design II |
| ME 318 | 618 | FEA I (Elective) |
| ME 319 | 619 | FEA II (Elective) |
| ME 325 | 641 | Powder Metallurgy (Elective) |
| ME 327 | 643 | Engrg. Fracture Mech. (Elective) |
| ME 330 | 669 | Strength Composite Mat. (Elective) |

### Energy

| | | |
|---|---|---|
| ME 241 | 607 | Thermodynamics I |
| ME 245 | 620 | Thermal Engineering |
| ME 342 | 608 | Thermodynamics II |
| ME 346 | 615 | Energy Conversion (Elective) |
| ME 347 | 610 | Fluid Mechanics |
| ME 349 | 616 | Heat Transfer |
| ME 352 | 627 | ME Lab II Energy Systems |
| ME 360 | 670 | IC Engines (Elective) |

### Mechanical Systems

| | | |
|---|---|---|
| ME 274 | 131 | Analytical Methods |
| ME 371 | 614 | Mechanical Control Systems (Elective) |
| ME 377 | 667 | Robotics/Mfg. Systems I (Elective) |
| ME 378 | 668 | Robotics/Mfg. Systems II (Elective) |

| New Number | Old Number | Sub-specialty and Title |
|---|---|---|

## MATHEMATICS, PHYSICS, AND CHEMISTRY

### Mathematics

| | | |
|---|---|---|
| RM 101 | 1101 | Intro to College Algebra |
| RM 102 | 1102 | College Algebra |
| RM 103 | 103 | Trigonometry |
| MA 025 | 104 | Calculus I (3 credits) |
| MA 026 | 105 | Calculus II (3 credits) |
| MA 227 | 106 | Calculus III (3 credits) |
| MA 321 | 107 | ODE |

### Physics

| | | |
|---|---|---|
| BE 341 | 501 | Physics I—Mechanics (3 credits) |
| BE 342 | 502 | Physics II—Heat, Light, Sound (3 credits) |
| BE 343 | 503 | Physics III—Electricity (3 credits) |
| BE 346 | 506 | Physics—Modern Physics |

### Chemistry

| | | |
|---|---|---|
| BE 201 | 201 | Chem I Inorganic (3 credits) |
| BE 202 | 202 | Chem II Inorganic/Organic (3 credits) |

# Engineering Course Descriptions

*Note 1: Description of Mathematics, Physics, Chemistry and Liberal Arts courses required for the Engineering Degree see starting page 82.*

*Note 2: Course numbers in use prior to 1994 shown in parenthesis.*

# Electrical Engineering

## Circuit Design and Analysis Techniques

**EE 210 (771) — Fundamentals of Electric Circuits**
**(Prerequisites: 106,503) 45-3**

An introduction to the analysis of electric circuits including the definition of units, types of circuits and the basic laws is presented. Mesh and Nodal analysis based on Kirchoff's Laws are stressed with solution by algebraic and determinant techniques. Thevenin and Norton theorems are developed. Sinusoidal analysis including Phasor techniques are introduced. DC and AC power and its measurement are presented. Superposition, reciprocity and maximum power transfer theorems are developed and applied. The use of the computer as an aid in circuit analysis is introduced.

**EE 211 (773) — Circuit Analysis II**
**(Prerequisites: 107,119, 771) 45-3**

After a brief review of fundamental circuit analysis techniques, both time and frequency domain analyses of passive and active circuits are examined. Computer usage via MICROCAP is employed to aid the analysis. The Fourier expansion of complex waveforms are developed with MATHCAD used as the vehicle to perform the coefficient calculation.

**EE 220 (704) — Linear Circuit Analysis**
**(Prerequisites 111, 119 & 773 or 772) 45-3**

The transient and steady state response of electrical circuits are studied using both classical and transform techniques. Circuits with inductance, capacitance, and resistive elements are studied for natural and forced response. Pole and zero concepts are introduced. One and two port network concepts are employed. Frequency response and pole zero plots are applied to circuits and systems. Fourier integral and transform techniques are studied. The LaPlace transform and its inverse are developed and applied to circuit problems. The computer is employed as a tool in the calculations for homework problems and design assignments MICROCAP IV is used to confirm the analyses.

**EE 224 (111) — Advanced Engineering Mathematics**
**(Prerequisite 107) 45-3**

Introduction to the mathematical techniques required for the solution of advanced engineering programs. Topics include Fourier integrals and series expansion: solution of linear differential transforms. Systems of near equations by series and Laplace transforms. Complex numbers review of matrix solutions. Eigenvalue problems and iterative processes. Application of advanced mathematics in engineering problems.

**EE 245 (732) — Digital Electronics**
**(Prerequisite: 705) 45-3**

This course covers both the theoretical and practical aspects of digital logic design, binary and hexadecimal number systems are presented. Logic gate symbols, Boolean expressions and truth tables are developed. Boolean algebra theorems are developed and simplified. Karnaugh mapping theory is developed and applied in a design project. TTL combinational circuits are studied followed by sequential logic systems. Programmable logic devices are introduced including programming techniques and basic state machine architecture. Design and laboratory projects apply the theory to practical problems.

**EE 290 (766) — Introduction to Electrical Systems**
**(Prerequisite: 771, 705) 30-2**

A course designed primarily for the nonelectrical engineering student to introduce the concepts of AC systems, transformers, digital techniques and mechanical analogs.

**EE 301 (709) — Transform Analysis Techniques**
**(Prerequisite 704) 45-3**
The concepts of linear time invariance and convolution are presented. LaPlace transform techniques are further studied and applied to circuits. Signal sampling concepts are investigated. The Z Transform is developed and applied to a variety of electrical systems. Design assignments are used to augment class problems and apply the concepts to engineering problems. The computer is used to assist in the calculations. The laboratory is used to demonstrate the concepts and confirm student designs.

**EE 302 (715) — Feedback Systems Engineering**
**(Prerequisite 709) 45-3**
A course in basic feedback theory including system development and analysis. Stability criteria, sampling techniques and approaches to achieve stable closed loop performance are presented. The design of systems to meet given requirements are included to apply the concepts. The computer is employed in the analysis and the laboratory is used to demonstrate concepts and confirm design performance.

**EE 320 (130) — Vector Analysis**
**(Prerequisite 107) 30-2**
Scalar and vector definition, vector addition and multiplication divergence and curl, directional derivatives. Green's, Stoke's, and Gauss's theorem.

**EE 321 (719) — Fundamentals of Electromagnetic Fields**
**(Prerequisites: 130 8 709) 45-3**
Electric and magnetic fields are investigated through the use of vector calculus. Techniques for the computation of fields and capacity for given charge distributions are outlined. The significance of Poisson's and LaPlace equations are studied with methods of solution. Components specifications and implementation alternatives are considered and design concepts to achieve the objective are developed.

## Systems Design and Analysis

**EE 304 (716) — Digital Control Systems (Elective)**
**(Prerequisite 715 - 733 recommended) 45-3**
The design and analysis of digital feedback systems are developed. Signal conversion and processing techniques, Z transform analysis, transfer function block diagrams and state variable techniques are developed. Time and frequency domain analyses are employed to determine system stability and achieve optimum control. Design projects with computer simulation apply the techniques to engineering situations.

**EE 325 (718) — Microwave Systems Engineering (Elective)**
**(Prerequisite: 719) 45-3**
The fundamentals of Microwave theory are examined using Maxwell's equations. Plane waves in lossless and dissipative media are studied as well as propagation in ideal and lossy transmission lines. Wave guide theory is developed. Microwave resonators, filters, amplifiers and oscillators (TWT, klystron, magnetron) are investigated. Radiation via antenna systems is presented. Design problems to meet specific objectives apply the concepts in an engineering development experience.

**EE 345 (733) — Digital Computing Systems**
**(Prerequisites: 732 or 707) 45-3**
Fundamental operation of synchronous and asynchronous digital computing systems are studied and the techniques for implementing these designs are developed. Fundamentals of computer architecture and programming in assembly and machine language are presented. Problem statements and specifications are generated and implemented by programs on a representative microcomputer.

**EE 346 (758) — Microprocessor Hardware Control Systems (Elective)**
**(Prerequisite: 733) 45-3**
Techniques for hardware control through firmware and software are studied. Control systems are created using a variety of computing systems. Assembly code design and microprocessor system development on the personal computer are emphasized. System specification, alternate technique evaluation and analysis of performance are illustrated in design problems. Software life cycle costs are explained.

**EE 350 (726) — Communications Systems (Prerequisite: 709) 45-3**

An introduction to analog and digital communications systems analysis including the mathematical treatment of the effects of various noise sources on signal masking. Modulation and demodulation techniques (AM, FM, PM & pulse code) are developed. Design problems are employed to permit the student to apply the concepts to meet system objectives.

**EE 352 (738) — Digital Communications Systems (Elective) (Prerequisite: 709 and 732 or 707-726 Recommended) 45-3**

This course is designed to explore current digital communication features. Fundamentals of sampling principles and channel coding are utilized to develop standard digital modulation techniques (ASK, FSK, PSK, PCM, and delta modulation). Multiplexing and multiple access networks are also analyzed. Techniques are applied in design assignments with students designing to meet specified performance.

**EE 354 (761) — Electro-optical Data Communications Systems (Elective) (Prerequisites 709,712-726 Recommended) 45-3**

The theory and basic elements of fiber optic communications systems are studied. Fundamentals of transmission in optical fibers are developed. Source component operation including light emitting diodes and solid state lasers are studied. Coupling element and detector devices are investigated. Modulation and demodulation techniques are analyzed and overall loop performance determined relative to bandwidth and signal to noise ratio. Design problems enhance student understanding.

**EE 360 (735) — Electrical Machine Analysis (Elective) (Prerequisite: 709) 45-3**

Basic equivalent circuit models are developed for various electrical machines including transformers, DC generators & motors, and induction and synchronous AC motors. The models are applied to determine transient and steady state machine performance. Design assignments to apply the concepts are reinforced by laboratory evaluation.

**EE 365 (759) — Power Systems Analysis (Elective) (Prerequisite: 709) 45-3**

An introduction to the analysis of high voltage power systems and components including the study of AC and DC transmission lines, power transformers and synchronous generators. Methods of analysis include system models, network calculations, symmetrical components, non-symmetrical faults and power system stability.

**EE 370 (740) — Instrumentation Systems Engineering (Elective) (Prerequisites: 119,712, 743) 45-3**

A course outlining the development of instrumentation systems including the basics of transducer technology, signal processing, analog to digital and digital to analog signal conversion and data transmission. Noise suppression and modulation techniques are developed. Instrument control and data gathering via the IEEE 488 bus are developed and applied to a system design for evaluation in the laboratory.

**EE 375 (747) — Electrical System Design Analysis (Prerequisite: 705, 772 or 773) 30-2**

The impact of component fabrication tolerances and temperature effects on system performance are studied with particular emphasis on the way these factors must be considered in circuit and system design. Techniques for analysis (including statistical methods) are presented and applied to specific examples. Student designs are employed to apply the approaches to typical engineering design problems. The concepts of reliability engineering and fault tolerant designs are introduced. The computer is used to assist in the evaluations.

## Electrical Circuits and Devices

**EE 230 (705) — Electron Devices and Applications**
**(Prerequisite 771) 45-3**

The physical operation of semiconductor junctions are studied and applied. The operation of both ideal and actual diodes are developed and applied to circuits for basic rectification and AC to DC power conversion. Bipolar Junction Transistor (BJT) and Field Effect Transistor (FET) devices are investigated and their operation applied to amplifier circuits. Biasing techniques are analyzed with respect to power efficiency and circuit stability. Device models are created and the concept of "h" parameters derived to assist in performance analysis. Frequency response limitations and coupling techniques for multistage amplifiers are developed. Techniques for laboratory investigation of performance are presented.

**EE 330 (706) — Electronic Amplifiers & Applications**
**(Prerequisites 705, 773 or 772) 45-3**

A detailed analytic study of electronic amplifier performance and practical applications. Various BJT and FET amplifier configurations are studied with respect to frequency response (Bode Plots) and the gain/bandwidth concept is developed. The impact of noise on amplifier performance is presented. Frequency compensation techniques are outlined. Integrated amplifier circuits (operational amps) are investigated and applied to a variety of applications. Feedback techniques are investigated. Design assignments are employed to apply the concepts to practical engineering problems.

**EE 332 (712) — Electronic Engineering**
**(Prerequisites 706 and 732 or 707) 45-3**

The application of electron devices to a variety of applications are presented and analysis techniques developed for student to apply in several design assignments. Among the circuits studied are oscillators and waveform generators, passive and active filter circuits, modulators and demodulators, comparator and trigger circuits, D to A and A to D converters, sample and hold circuits, phase lock circuits, power supply circuits and signal conditioning circuits. Various computer analysis programs are employed for the analyses and the laboratory is used for the confirmation of designs.

## Electrical and Electronic Laboratories

**EE 280 (741) — Electrical Laboratory**
**(Prerequisites: 705, 773) 45-1**

A laboratory course stressing the fundamentals of circuit theory and electronics. Experiments include verification of network analysis techniques including mesh and nodal equations, theorems (Thevenin, Norton, superposition, etc.) maximum power transfer and the performance of basic reactive circuits. Diode and transistor characteristics are prepared and applied in basic electronic circuits. Single and polyphase power measurements are made. Students develop measurement techniques to achieve the experimental objectives. An ethics component explores the meaning of professionalism and engineer's societal responsibilities.

**EE 291 (746) — Basic Electrical Laboratory**
**(Co-requisite 766) 30-1**

A laboratory course designed for the nonelectrical engineer to acquaint the student with the fundamental principles of circuits, electronics (analog and digital), and electrical systems.

**EE 380 (743) — Intermediate Electrical Laboratory**
**(Prerequisites: 741, 712 and 715) 30-1**

A laboratory course designed to reinforce the principles of electrical systems and circuits including feedback, electronic systems, and transform analysis techniques. Students are required to develop the details of the experiments and employ the computer for data processing and report preparation. Conclusions and cause for variations between theory and experiment must be presented. The engineering ethics module examines case studies to further understand the engineer's societal responsibility.

**EE 382 (742) — Advanced Electrical Project**
**(Prerequisite: Departmental approval of project proposal following completion of nonelective EE courses (including 743) & at least one major elective.) 30-2**

A design course placing major emphasis on individual student creativity. The student (working with a faculty mentor) develops the project objectives and performance specifications. At review meetings the student presents progress on the project including analytic

and experimental results to date. A final report and presentation demonstrates the accomplishments and significant conclusions. Faculty involvement seeks to create a realistic engineering development environment. Note: The student may take this course as "independent study" once the prerequisites have been met.

# Engineering Graphics and CAD

**301 — Engineering Graphics 1** **45-3**
The theory of orthgographic projection, threads and fasteners, assembly drawings, object visualization geometric constructions, dimensioning, and tolerancing, sections, technical sketching and pictorial representation. Replaced by 311. Available for transfer credit only.

**302 — Engineering Graphics II (Prerequisite 301)** **45-3**
Graphics applied to the solution of spacial problems by means of descriptive geometry. Replaced by 312. Available for transfer credit only.

**CD 010 (310) — Computer Aided Drafting (CAD) (Prerequisite 301 or equivalent)** **30-1**
Overview of CAD systems Basic Functions using IBM compatible computers. Getting started and floppy disk storage. Course covers functional hierarchy, functional keys, menus, prompts, filing a model, calling a model Elements include points, lines, circles, windowing, relimiting, cornering, offsetting, line types, arrows, notes, and dimensioning Application of CAD to engineering drawing. For those who have credit for 301 and are advancing to 312

**CD 111 (321) — Technical Graphics—CAD I** **45-3**
Basic course in engineering technology graphics coordinated and taught simultaneously with CAD. Board work, technical sketching.

**CD 112 (322) — Technical Graphics—CAD II (Prerequisite 321 or 310 with 301 equivalent)** **45-3**
Continuation of 321, technical graphics with introduction to descriptive geometry and advanced CAD.

**CD 211 (311) — Engineering Graphics — CAD I** **60-4**
Basic course in engineering graphics coordinated and taught simultaneously with CAD application Board work covers geometric constructions, theory of orthographic projection, visualization, dimensioning, tolerancing, sections, screw threads and fasteners, assembly drawing, isometric tolerancing Technical sketching is stressed For description of CAD Port on see course 310.

**CD 212 (312) — Engineering Graphics — CAD II (Prerequisite 311 or 310 with 301 equivalent)** **60-4**
Introduction to descriptive geometry with advanced computer aided drafting/ design. Course builds on concepts and functions of 311 and introduces SPLINE curves, functions for GROUP operations, DETAIL for geometry transfer and standard libraries, the AUXVIEW for orthographic view projection. Utilization of ANALYSIS for complex section properties, concepts of NO-SHOW, and a final design project complete the course.

**CD 213 (313) — Graphic Science 8 Design (3-D CAD) (Elective) (Prerequisite 312 or equivalent)** **30-2**
Introduction to 3-D CAD using CADKEY and IBM compatible PCs. 3-D design topics including Display Manipulation, Level Management, View Coordinates and World Coordinates, Construction Modes, Depth, Construction Planes. Wire frame model construction. Introduction to solids. Process and design for the real world.

# Information Systems Engineering

**IC 209 (109) — Probability and Statistics (Prerequisite 105 or equivalent)** **45-3**
Probability, random variables, discrete and continuous probability distributions, estimation, hypothesis testing, linear regression and correlations.

**IC 222 (122) — Simulation Techniques (Prerequisites 107,1 09 and 1 20)** **45-3**
The use of simulation methods for the analysis and design of various types of systems employing computer techniques. General purpose languages for simulation and use of discrete and continuous simulation languages for probabilistic and analog systems.

**IC 227 (127) — Object Oriented Programming Using C++**
**(Prerequisite 125) 45-3**
Introduction to object oriented methodology and abstract data types. Discussions in polymorphism and data encapsulation. Examples of using object oriented programs in situations, as well as large system integration by object oriented methodology.

**IC 250 (350) — Intro to Information Systems Engineering**
**(Prerequisite 125) 45-3**
Components of Information Systems; Inputs, Outputs, Storage and Processing; Data and Information Signals; Conversion of signals from one physical form to another; Modems; Magnetic, electrical and optical storage; Transmission media; Transmission coding: Networking.

**IC 326 (126) — Computer Architecture II**
**(Prerequisite 123) 45-3**
Memory management; application of computer and communications systems Measurement techniques. Simulation and Analytical techniques. Evaluation of computer capacity. Developing system specifications.

**IC 355 (355) — Database Management Systems**
**(Prerequisite 125) 45-3**
Data formats, Organizations, Representations and structures. Design and analysis of searching, sorting and other algorithms Data management systems; Types of Data Base systems; Logical data models and Database usage. Relational databases.

**IC 360 (360) — Communications Networks**
**(Prerequisite 350, 733) 45-3**
Intro to computer communications networks, including network architecture and protocols, elements of networks, data link switching, routing and end to end protocols, local area networks, interfacing digital systems, buses, parallel and serial interfaces and standards. Pricing exercises evaluating alternative service costs Integrated services digital network (ISDN), Systems network architecture (SNA).

**IC 380 (380) — Software Engineering Techniques**
**(Prerequisite 355) 45-3**
Software design and testing techniques. Structured design and CASE techniques. Design approaches including object oriented, Data flow oriented, Data structured and Real time Unit and system integration and testing. Test documentation.

**IC 381 (381) — Software Engineering Practices**
**(Prerequisite 355) 45-3**
Software Engineering management practices. Project planning, Quality Assurance, Test plan, Maintenance process and configuration management. Developing software system specifications. Applications software to supplement the lecture discussions.

**IC 385 (385) — Systems Engineering**
**(Prerequisite 360, 380) 45-3**
Engineering application of System analysis to practical problems; optimal solutions; Linear programming, Simulation and Statistics.

**IC 390 (390) — Computer Applications Laboratory**
**(Prerequisite 360) 30-1**
A laboratory course stressing the fundamentals of information systems design, management and maintenance. An engineering ethics component highlights its importance in 'real life' situations. Experiments focus on practical engineering applications that include topics such as the effects of noise on system operation, shielding, bus performance, local area networks, multimedia, computer performance and data base exercises.

**IC 392 (392) — Senior Information Systems Engineering (ISE) Project**
**45-3**
A capstone design course emphasizing student creativity and organizational abilities. The student works with a faculty mentor to select a project that is representative of a realistic information systems engineering development task. The student prepares design goals, executes a literature search, prepares an in depth analysis, and develops the experiment. A final report and presentation demonstrates the student's accomplishments. The student meets with the mentor on a regular basis to discuss the project's status and to review alternative solutions to problems. This course may be taken as "independent study."

# Manufacturing, Materials and Management Engineering

## Materials

**MF 206 (206) — Engineering Materials**
**(Prerequisite 202) 45-3**
Study of materials science and engineering. Includes engineering properties of metals, polymers, ceramics, semiconductors, and magnetic materials. Relationships of materials to service and design applications are covered. Laboratory sessions are included.

**MF 307 (207) — Advanced Engineering Materials**
**(M.E. students only)**
**(Prerequisite 206)**
Expands beyond Engineering Materials 206 (previously 204) to detail and include topics such as heat treatments, transformation diagrams, phase diagrams, alloy and microstructures. Emphasis is directed toward the aspects of metallurgy, engineering design and industrial processing. Laboratory sessions are included.

**MF 310 (203) — Polymer Chemistry (Elective)**
**(Prerequisites 201 and 202) 45-3**
This descriptive course is intended to acquaint the student with the classes, properties and utility of polymers. Topics to be presented include: history of polymer chemistry, addition and condensation polymers, copolymerization, characterization of polymers, fibers and elastomers, and water soluble polymers as time permits. Emphasis is on compositions and properties required for specific application.

## Manufacturing

**MF 351 (851) — Manufacturing Systems I 45-3**
**MF 352 (852) — Manufacturing Systems II**
**(Prerequisites 107,130,118,501, or permission of instructor) 45-3**
This two course sequence will introduce to the student the basic methods of analysis used in automation and modem production systems, including principles and procedures related to design implementation, control and operation of manufacturing systems. Topics include F.M.S., Robotics, transfer lines, NC, CNC, CAD, CAM, cost, quality, materials, and material handling.

**MF 353 (853) — Manufacturing Processes and Materials**
**(Prerequisite — 852 or permission of instructor) 45-3**
This course will provide basic knowledge of conventional and non-conventional manufacturing processes, as well as the design, engineering, and economic properties of conventional and non-conventional material. Considered are the influence of processing on material structure and properties and the role of processing in design of product. Included are processes such as casting, forging, sheet metal fabrication, plastic forming, injection of plastic and metals, powder metal joining, machining.

**MF 354 (854) — Product and Process Design for Manufacturing**
**(Prerequisite — 853 or permission of instructor) 45-3**
This course will consider many of the modern methods and tools for designing products and processes for manufacturability. Topics include: design for production; influence of materials on design; material handling; automatic inspection and instrumentation; tools, methods and techniques for product design and analysis.

**MF 355 (855) — Product Planning, Control and Forecasting**
**(Prerequisite-854 or permission of instructor) 45-3**
This course will consider modern operations of both manufacturing and service sectors of the world economy. Topics to be included are: concepts of planning and control of production systems; design of control systems and operation planning; demand forecasting; inventory control, operations planning; scheduling; dynamic control; production planning of product mixes; economical lot sizes and vendor supplies. Where possible, computer models will be used.

## Management Engineering

**MF 371 (901) — Industrial Management (Prerequisite 403) 45-3**
Development of management thought, nature and functions of management, role of the manager, setting goals and policies, planning and decision making, Organizational behavior, individual and group behavior, motivation and morale leadership. Formal organization theory and structure, staff concepts, delegation and focus of decision making. Communications and control systems.

**BEI 902 (902) — Engineering Economy (Prerequisites 105 and 403) 45-3**
The fundamental concepts of engineering economic analysis are presented for engineers. The tools required to resolve engineering problems by the application of the criteria for economic efficiency are developed. The exact methods of present worth analysis, annual cash flow analysis, and rate of return analysis as applied to engineering problems are taught. Economic analysis is based on the concept of equivalence and the derivation of compound interest formulas. The realistic and complex effects of depreciation, income tax, and inflation on economic analysis are demonstrated. Six computer programs for use on IBM-PC, -XT or compatibles are used to solve a variety of engineering economic analysis problems.

**BEI 915 (915) — Business Law 1 (Elective) 45-3**
A course designed for the engineer who has had no practice in solving legal problems and who needs a background in the legal complexities confronting the engineer in our society. Such legal areas as contracts, torts, agency, patent and trademark rights, environmental law, along with a discussion of the ethical and professional responsibilities of engineers and architects will be discussed in straightforward language uncomplicated by legal jargon. The necessary legal reasoning, legal procedures, ethics, etc. are examined from the viewpoint of the engineer as employee, agent, manager or executive.

**BEI 916 (916) — Business Law II (Elective) (Prerequisite 915) 45-3**
A continuation of Business Law 915. Negotiable instruments, sales, real and personal property, security transactions, partnerships and corporations, copyrights, trademarks and patents, ethical and legal responsibilities of engineers.

**MF 385 (917) — Environmental Law (Elective) 45-3**
An overview of the current body of law known as "Environmental Law" by analysis of caselaw, statutes and administrative regulations. Discussion of administrative agencies and the review of their decisions. Acts to be discussed include the Clean Air Act, Clean Water Act, Comprehensive Environmental Response, Compensation and Liability Act. Resource Conservation and Recovery Act and the National Environmental Policy Act. Discussion of technological and economic feasibility defenses and available remedies. Overview of land use considerations that concern the protection of natural resources.

## Engineering Seminar

**MF 390 (804) — Engineering Design Seminar (Prerequisite — student required to have completed all courses through fifth year. Preferably one year prior to expected graduation.) 90-6**
A "capstone" course in which students work in teams choosing advanced projects which emphasize the engineering design approach. Literature search, synthesis, and in depth analysis and experimentation are required. Frequent presentations to faculty and peers are required of each member of the team. To enable successful presentation skills, the student will be required to take instruction in effective communication during the two term course. An oral presentation, written report, and working models culminate the seminar. This is a two term continuous course beginning in the fall term.

# Mechanical Engineering

## Solid Mechanics

**ME 201 (601) - Statics (Prerequisites 104, 501 and 311) 45-3**
Introduction to the fundamental concepts of rigid body mechanics, using vector representation of forces, free-body diagrams and conditions of equilibrium in two-and-three dimensions. Covers force analysis of trusses, frames and simple machines with frictional forces included. Analysis by computer is emphasized along with the development of problem solving techniques.

**ME 202 (602) — Dynamics**
**(Prerequisites 105 & 601) 45-3**
Analysis of forces utilizing Newton's second and third laws of motion: theory of kinetics of particles and linkages under rectilinear and curvilinear motion: mathematical and graphical methods; review of work, energy and power; momentum and impact.

**ME 203 (603) — Kinematics**
**(Prerequisites 119, 312 and 602) 45-3**
The presentation of kinematic principles applied to basic machine mechanisms: graphic and analytic analysis of velocities and accelerations in transmission of motion by direct contact, linkage, gears, sliding block mechanisms, cams and belts. Fundamentals of analyzing and developing engineering designs.

**ME 205 (605) — Strength of Materials I**
**(Prerequisites 601) 45-3**
Concept of stress; pin loaded joints; factors of safety; basic stress-relations in two dimensions; thermal strains; indeterminate problems; stress concentration factors; torsion; shatting; coupling and related applications; theory of bending, including normal and shear stresses; eccentric loading; transverse shear stresses; principle stresses and Mohr's circle; theories of failure; thin walled pressure vessels.

**ME 306 (606) — Strength of Materials II**
**(Prerequisite 605) 45-3**
Shear and Bending moment diagrams; elastic curves; deflection of beams of integration and area moment methods; use of singularity functions: indeterminate beams; the principle of superposition; energy methods; elastic strain energy; impact loads; deflection by work-energy method; Castigliano's theorem; column theory. Formulation of designs into mathematical models stressing computer-based analysis.

**ME 308 (624) — Mechanical Engineering Laboratory — Mechanical Systems**
**(Prerequisites 501, 608 & 606) 45-1**
An integrated educational approach to engineering experimentation which incorporates the concepts of statics, dynamics, kinematics and strength of materials. Includes the fundamentals of electronic instrumentation for measurement of engineering properties and data acquisition base on statistical error analyses. Data documentation and report writing are emphasized for product design testing and validation.

**ME 309 (609) — Mechanical Vibrations**
**(Prerequisites 131, 120 & 603) 45-3**
Theory of mechanical vibrations and methods of attenuating detrimental effects Kinematics of periodic motion, linear single degree of freedom, and critical speed phenomena. Forced harmonic vibrations. Critical and subcritical damping Multidegree of freedom systems, free and forced vibration. Matrix methods and operational methods for solution of vibration problems Study of LaGrangian Methods to formulate complex vibration problems. Emphasis is on digital computation techniques.

**ME 311 (611) — Machine Design**
**(Prerequisites 603 & 606) 45-3**
Elements of machine design applying the principles of kinematics, dynamics and strength of materials. Student creativity is developed through open ended problems and the formulation of design methodology and specifications. The use of alternative solutions are encouraged based on realistic design concepts and constraints.

**ME 312 (612) — Advanced Machine Design**
**(Prerequisites 609 or 611) 45-3**
Advanced study of mechanical designs emphasizing the process of developing creative solutions through conceptual analysis and synthesis. Instruction is based on design projects emphasizing organization and management. Each project entails risk and financial analysis as well as computer simulations and computations.

**ME 318 (618) — Introduction to the Finite Element Method of Structural Analysis (Elective)**
**(Prerequisites 106, 119 & 605) 45-3**
Applications of Finite Element Analysis in modern engineering. Matrix analysis of structures. Stiffness matrix formation. Energy methods. Computer techniques for finite elements. Review of commercial finite element programs Students will solve problems both manually and with the use of a computer program.

**ME 319 (619) — Finite Element Analysis II (Elective)**
**(Prerequisite 618) 45-3**
An introduction to advanced concepts in Finite Element Analysis. An introduction to the concepts of dynamics as applied to structures. The principals of mode shapes and their corresponding frequencies. Time history analysis will include modal superposition, direct integration and response spectrum methods Tandom vibration analysis will be introduced. The Finite Element Analysis will be extended to problems in heat transfer including both steady state and transient analysis, conduction, convection and radiation modes will be covered.

**ME 325 (641) — Practical Powder Metallurgy (Elective)**
**(Prerequisites 206 or 207) 45-3**
Introduction to net shape forming technology using particulate materials (P/M) The fundamental principles of the process, the physical and mechanical behavior of particulate materials, and the practical applications in design are presented. The emphasis is placed on the powder metallurgy, composite materials and advanced particulate materials. A hands-on project is incorporated in the course to allow students to experience the P/M process and understand the characteristics of the P/M materials.

**ME 327 (643) — Engineering Fracture Mechanics (Elective)**
**(Prerequisites 204, 606) 45-3**
Design, analysis and test comparing conventional design with fracture mechanics approaches. Applications of fracture mechanics designs, selection of materials and failure analysis.

**ME 330 (669) — Strength of Composite Materials (Elective)**
**(Prerequisites 111, 605) 45-3**
Classical lamination theory. Introduction to the theory of elasticity that expresses the relationship between the laminate strain tensor and the stress field throughout the laminate. Single-layered isotropic, specially orthotropic, and anisotropic layers. Symmetric laminates; multiple generally orthotropic layers. Properties of the A, B, and D stiffness submatrices as partitioned from the laminate general stiffness matrix. Failure theories; causes of delaminations. Stress analysis of multiple symmetric balanced laminates. Computer programs are applied to stress analysis. Design project and laboratory projects are required.

## Energy

**ME 241 (607) — Thermodynamics I**
**(Prerequisites 107 & 502) 45-3**
Classical macroscopic thermodynamics with engineering applications. For Mechanical Engineers. Conservation of energy for open and closed systems. Equations of state and pure substances. First and second law of thermodynamics, including internal energy, enthalpy, entropy. Tables of thermodynamic properties. Ideal gases Conservation of mass. Elements of cycle analysis.

**ME 245 (620) — Thermal Engineering**
**(Prerequisites 107 & 502) 45-3**
A course designed for the non-mechanical student. Thermodynamic Fundamentals. Conservation of Energy. Equations of State. First Law. Second Law and Applications to Information theory. Internal Energy, enthalpy and entropy. Heat Transfer: Conduction, Convection and Radiation. Fluid Flow, Dimensional Analysis. Extended Surfaces. Applications to Cooling of Electronic Equipment in Electrical Systems.

**ME 342 (608) — Thermodynamics II**
**(Prerequisite 607) 45-3**
A continuation of 607 Mixtures of ideal gases and vapors. psychrometry, and combustion Analysis of common power generating, refrigeration, and air conditioning cycles. Figures of merit, including thermal efficiency. Continuity and momentum equations for steady, one-dimensional frictionless flow. Basic energy relations for turbomachinery. Fundamentals of compressor and turbine design. Application and synthesis of design using thermodynamic principles.

**ME 346 (615) — Energy Conversion (Elective)**
**(Prerequisite 607) 45-3**
Selected topics in energy conversion, including solar energy; propulsion; internal combustion engines; battery power; heat pumps; classic and novel power and refrigeration cycles; system analysis; system economics; environmental considerations.

**ME 347 (610) — Fluid Mechanics**
**(Prerequisites 601 & 607)** **45-3**
Incompressible fluids at rest and in motion Introduction to compressible fluids: fluid statics: Bernouli's theorem and the principle of similarity Flow through orifices, nozzles, and pipes Flow through open channels; energy relationships as applied to pipe lines, pumps and turbines. Acceleration of fluid masses; fluid dynamics the momentum theorem; turbomachinery.

**ME 349 (616) — Heat Transfer**
**(Prerequisites 120, 502, 607 & 610)** **45-3**
One and two-dimensional heat conduction, including solutions for finned surfaces and solutions for transient problems. Convection heat transfer in laminar and turbulent flows. Fundamental radiation concepts. Laws of thermal radiation Radiation exchange geometrical factors and Oppenheim network methods Heat exchangers and electrical analogies. Emphasis is placed on design solutions using computer analysis and synthesis.

**ME 352 (627) — Mechanical Engineering Laboratory II — Energy Systems**
**(Prerequisites 624, 608, 609 & 610)** **45-1**
Classroom and experimental work assigned on a project basis. Experimental procedures based on statistical analytical methods applicable to the computer simulation and evaluation of mechanical designs. Experimental work includes heat transfer, fluid dynamics, rotational vibrations and feedback control.

**ME 360 (670) — Internal Combustion Engines (Elective)**
**(Prerequisite 608)** **45-3**
The theory of internal combustion engines will be presented including the types of engines; gas cycles; fuel air and combustion thermodynamics; fuel air cycles; engine performance.

## Mechanical Systems

**ME 274 (131) — Analytical Methods for Mechanical Engineers**
**(Prerequisite 111 )** **45-3**
Continuation of solutions of systems of linear algebraic equations and method of determinants; Cramer's Rule. Matrix algebra and calculus. Numerical methods for Eigenvalue and eigenvector. Introduction to boundary-value problems; approximate solution and optimization techniques using Rayleigh, Rayleigh-Ritz and Galerkin methods. Probability theory and applications. Design project required.

**ME 371 (614) — Mechanical Feedback Control Systems (Elective)**
**(Prerequisites 609 or 709)** **45-3**
The dynamics of machinery extended to mechanical automatic control systems. Basic elements of servomechanisms with comparison of electrical, hydraulic, and mechanical systems. Analysis of the physical elements for control and feedback using transfer functions. Transient response and stability analysis. Practical applications to mechanical designs are presented.

**ME 377 (667) — Robotics and Manufacturing Systems (Elective)**
**(Prerequisites 106, 501, 602, 603 or electrical equivalent)** **45-3**
Combined classroom and laboratory introduction to Automation, Robotics, the Automatic Factory and the Third Industrial Revolution. Historical development of Automation. Theory and Application of Robotics Introduction to Manufacturing Systems

**ME 378 (668) — Robotics and Manufacturing Systems II (Elective)**
**(Prerequisite 667)** **45-3**
Combined classroom and laboratory continuation of 667. Engineering studies of the components of the future automatic factory. Engineering studies of the future automatic factory system.

# Course Descriptions

*Note 1: Required and selected courses in Mathematics, Physics, Chemistry and Liberal Arts required or suggested for the Engineering Degree. For complete department descriptions refer to Catalague of College of Liberal Arts and Sciences.*

*Note 2: For Engineering Course Descriptions see page 71.*

*Note 3: Course numbers in use prior to 1994 shown in parenthesis.*

**BE 201 (201) — Chemistry I**
**(Prerequisite 1101 ) 45-3**
The study of chemistry introduces the fundamental concepts of matter including physical measurements, periodic classification of elements and compounds; energy and weight relationships; gas laws; liquids and solids, and oxygen and hydrogen. Laboratory sessions are held concurrent with lectures.

**BE 202 (202) — Chemistry II**
**(Prerequisite 201) 45-3**
A study is made of water and solutions including concentration of solutions; chemical kinetics; equilibrium; ionic, equilibrium; electrochemistry and oxidation-reduction type reactions. Study continues with nuclear and organic chemistry Laboratory sessions are held concurrent with lectures.

**RM 117 (117) — Introduction to Computers and Their Engineering Applications**
**(Prerequisite 1101 or equiv., coreg. 1102) 45-3**
An introductory course in computers and emphasizing engineering applications. An introduction to basic hardware and software components, such as CPU, Memory, Input/Output, Communications and Operating Systems. Students are introduced to several types of popular software packages, including word processing, data base management, spreadsheet and Math-Cad. Assignments are given using software packages.

**CS 131 (119) — Computer Science I**
**(Prerequisites 106, 117 or equivalent) 45-3**
Development of design, coding, debugging, and documentation using structured programming for engineering problem solution. Computer problem solving heuristics, algorithm development using top-down design and good programming style. Laboratory work in solution of engineering problems using the PASCAL language. Offered each semester.

**CS 132 (120) — Computer Science II**
**(Prerequisite 111, 117, 119 or equivalent) 45-3**
Disciplined development in software design through the use of the scientific programming language FORTRAN. Principles and applications of FORTRAN for solution of numerical, mathematical, and engineering problems Comprehensive student exercises. Offered each semester.

**CS 133 (125) — Intro to Software Design with C**
**(Prerequisite 119 or 120) 45-3**
Application of data structures and Algorithms using the C language Emphasis is placed on the design, implementation, and evaluation of modular programs employing algorithms executed in C. Offered in the Spring Semesters.

**CS 322 (123) — Computer Architecture I**
**(Prerequisite 733) 45-3**
Instruction sets and formats, addressing techniques, memory organization and their effect on machine organization Utilization of architecture fundamentals at the microprogramming machine language and operating- system levels. Processor and communication organization and mainframe environments.

**CS 331 (124) — Operating Systems**
**(Prerequisite 123) 45-3**
Systematic top-down approach to operating systems concepts and features for applications programming Compilers, job control or command languages, access methods, linkage editors and loaders. Hardware/software interface and impact of machine architecture on its operating systems' design

**RM 101 (1101) — Introduction to College Algebra 90-6**
Numbers and number systems Operations on polynomials Factoring Algebraic fractions Radicals and exponents. Equations. Inequalities. Slopes Quadratic equations. Complex numbers.

**RM 102 (1102) — College Algebra**
**(Prerequisite 1101)** **90-6**
Functions and graphs. Polynomial, rational and logarithmic functions. Conic sections. Systems of equations and inequalities. Matrices. Determinants. Cramer's Rule. Linear programming. Zeros of polynomials. Partial fractions. Binomial Theorem. Sequences. Probability.

**RM 103 (103) — Trigonometry**
**(Prerequisite 1102)** **45-3**
Trigonometric functions and their graphs. Angles and the unit circle. Fundamental, sum and difference identities. Right-triangle applications. Oblique triangles. Laws of sines and cosines. Vectors. Complex Numbers. DeMoivre's Theorem. Polar form.

**MA 025 (104) — Calculus I**
**(Prerequisite 103)** **45-3**
Introduction to calculus and analytic geometry. Topics include derivatives, the chain rule, implicit functions, continuity, maxima and minima, and derivatives of trigonometric functions. Indefinite and definite integrals.

**MA 026 (105) — Calculus II**
**(Prerequisite 104)** **45-3**
Continuation of Calculus 104. Topic include the study of various transcendental and nonlinear functions and their derivatives. Introduction to integral calculus, integration of various functions and applications.

**MA 227 (106) — Calculus III**
**(Prerequisite 105)** **45-3**
Culmination of the Calculus sequence. Topics include hyperbolic functions, solid analytic geometry, partial derivatives, multiple integration, infinite series and matrices.

**MA 321 (107) — Differential Equations**
**(Prerequisite 106)** **45-3**
Introduction to the solution of ordinary differential equations which describe physical phenomena. Definition and solution of differential equations of first order and applications; higher order differential equations, solution and applications; operator methods and solution to system of linear differential equations; solutions of series expansion.

**BE 101 (501) — Physics — Mechanics**
**(Prerequisite 105)** **45-3**
Resolution and combination of forces. Newton's laws of motion, accelerated linear and angular motion, rotation, energy, work, power and friction; momentum: Hook's Law; simple harmonic motion. Laboratory is included.

**BE 102 (502) — Physics — Heat, Light, Sound**
**(Prerequisite 501)** **45-3**
Temperature and heat: measurement thermal balances, heat transfer, thermal properties (solids, liquids, and gases): waves: sound production, transmission interference and resonance: light reflection, refraction, lens and mirrors Laboratory included.

**BE 343 (503) — Physics — Electricity**
**(Prerequisites 106 and 502)** **45-3**
Basic elements of electricity and magnetism; units of measurements; Ohm's Law; Kirchoff's Law: induced EMF; inductance, capacitance; AC series circuits Laboratory included.

**PS 285 (506) — Physics — Modern Physics**
**(Prerequisite 503)** **45-3**
Electromagnetic waves; light interference and diffraction; Plank's Constant, photoelectric effect, Compton effect; particle/wave duality; uncertainty principle; Bohr Atom, quantum mechanics: semi conductors, nuclear structure, radioactivity; subatomic particles.

**EN 011 (401) — English 1** **45-3**
Introduction to literature, with emphasis on the essay and poetry. Development of language skills through vocabulary growth, grammar study, and oral communication. Particular attention to theme writing and practice in the techniques of clean exposition.

**EN 012 (402) — English II**
**(Prerequisite 401)** **45-3**
More intensive study of literature, with emphasis on short fiction, drama and original poetry. Vocabulary growth and instruction in techniques of oral communication. Seven to eight essays will be required in addition to a term paper of a critical essay using MLA library form.

**EC 012 (403) — Economics**
**(Prerequisite 401) 45-3**
A study of macro-economics with emphasis on fundamental concepts and principles used in the analysis of market processes, business organization and national income; detailed treatment of fluctuations in national income and connected problems; effects of taxes and spending in the public sector; theory of economic growth, problems in underdeveloped countries.

**HI 030 — The Foundations of Modernization in the West 45-3**
Under the impetus of the Renaissance and Reformation, the Western world began the process of modernization by re-examining its concept of society, its political, religious and economic institutions, and the individual's relationship to them. The rise of nation-states and imperial rivalries opened European contact with the rest of the globe. The Scientific Revolution and the Enlightenment accelerted the intellectual search for truth which found political expression in revolutions in Great Britian, the United States and France.

**HI 232 (417) — American History 1 45-3**
This course is a survey of the major political, cultural and diplomatic trends from the discovery of the New World to the Reconstruction Period (1876). Major topics would include the American Revolution, the Federalist Period, Jacksonian Democracy, and the Civil War.

**HI 238 (418) — American History II 45-3**
This course is a continuation of American History 417 with the same basic goals. Major topics would include: Industrial America, the Road to Imperialism, World War 1, the Twenties, Depression and New Deal, World War II, the Cold War.

**HI 239 (419) — Twentieth Century America 45-3**
This course in American History is designed for the student who wishes to broaden his knowledge of recent events. It will begin with a review of the first World War and continue to the present day. Emphasis will be placed on concepts drawn from politics, sociology, music and foreign affairs.

**FA 040 (430) — Art History 1 45-3**
A survey of Art with attention given to the interaction between Art and its cultural environment, socioeconomic and technological. Emphasis will be given to the three branches of Art — architecture, sculpture and painting. The time period to be covered will be from "the beginning" approximately 22,000 B C to the end of the Gothic approximately 1400 A D.

**PY 101 (407) — Psychology 1**
**(Prerequisite 401) 45-3**
A study of the physiological basis of perception and behavior, followed by an account of experimental findings on maturation, motivation, learning, individual differences, and group processes affecting the formation of role-concepts and attitudes; the role of emotions, kinds of reactions to frustration, neurotic and psychotic; major approaches to psychotherapy.

## The Award for Outstanding Faculty Service

| | |
|---|---|
| 1989 | Harvey Hoffman<br>Dr. Paul B. Botosani |
| 1990 | Felice P. Rizzo |
| 1991 | Mark Ramsey |
| 1992 | Daniel Dlugos<br>Jay Hoffman<br>Joseph Vostovich |
| 1993 | Joseph Hajla<br>Dr. Richard G. Weber |
| 1994 | Robert A. Fisch |

# Engineering Faculty and Staff Directory

**Drew Auth** *Associate Professor*
(B.S.M.E., Bridgeport Engineering Institute) Senior Reliability Engineer, Textron-Lycoming (retired)

**Clement I. Anekwe** *Associate Professor of Mechanical Engineering*
(M.S.M.E., University of Bridgeport; Ph.D., West Virginia University) Senior Engineer, Textron Lycoming

**Shahin Baghai** *Instructor of Electrical Engineering*
(B.S.E.E., B.S.C.E., University of Bridgeport) Senior Project Engineer Omega Engineering, Inc.

**Purnendu S. Baxi** *Instructor of Engineering Graphics*
(B.S., M.S.U., L.E. College (India); M.S., R.P.I.) Production Engineering, Group Leader, Holgraph Corporation

**Joseph A. Benedetti** *Instructor of Engineering Graphics*
(B.S.M.E., Bridgeport Engineering Institute) Senior Designer, Airframe/Loft, Sikorsky Aircraft

**Avi Ben-Porat** *Senior Instructor of Mechanical Engineering*
(B.SC., Israel Institute of Technology; M.SC., Polytechnic Institute of Brooklyn; P.E.D., Columbia University) Advanced Engine Systems Manager, Textron

**Jovan D. Boskovic** *Assistant Professor of Mechanical Engineering*
(B.S.M.E., M.S.M.E., Ph.D., Belgrade University—Yugoslavia) Design Engineer, Circuit Protective Device

**Paul P. Botosani** *Professor of Electrical Engineering & Robotics, Vice Chairman of Manufact. Dept., Principal Laboratory Engineer*
(B.S.E.E., ME.S.E.E., Ph.D., Institute of Bucharest (Romania), Visiting Faculty Fellow, 1989-90, 1991-92, Yale University; Member of Bridgeport Board of Education, 1992-95

**Robert P. Bourdoulous** *Senior Instructor of Materials*
(B.E., City College of New York; M.S.I.E., University of New Haven) Senior Engineer, Perkin-Elmer Corporation

**Robert W. Brewczynski** *Senior Instructor of Engineering Graphics*
(B.S.M.E., University of Hartford) Senior Design Engineer, Sikorsky Aircraft (Retired)

**Robert A. Castrignano** *Assoc. Professor*
(B.S.E.E., CCNY; M.E.E.; Polytechnic Univ. of New York) Prof. Engrg. License Connecticut Vice-Pres. Information Storage Systems Technology CBS Technology (Retired)

**Yew-Tsung Chen** *Associate Professor of Mechanical Engineering*
(B.S., Cheng Kung University (Taiwan); M.S., Ph.D., University of Minnesota) Manager/Senior Technical Staff, Pitney Bowes

**Eben C. Cobb** *Assistant Professor of Mechanical Engineering*
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**Donald G. Comiskey** *Vice Chairman & Associate Professor of Engineering Materials*
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**William W. Cowles** *Associate Professor of Electrical Engineering*
(B.S.E., Princeton University, M.E.E., Yale University; D. Eng., Electrical Engineering, Yale University)

**Philip D. Cracco** *Instructor of Industrial Management*
(A.S.E.E., Waterbury State Technical College; B.S.E.E., University of Hartford; M.B.A., University of New Haven) Sales Engineer, Tektronix

**Henry A. Cubberly** *Instructor of Engineering Graphics*
(B.M.E., Cooper Union; M.M.E., Brooklyn Polytechnic Institute) Consulting Engineer Technology Associates

**John R. Davis** *Instructor of Manufacturing Engineering*
(B.S.M.E., Bridgeport Engineering Institute) Manager Technical Services, Pitney Bowes, Inc. MBA

**Fred DePonte**, *Professor of Electrical Engineering*
(B.S.E.E., M.S.E.E., Yale University) Staff Engineer, Pitney Bowes

**S. Paul Dev** *Senior Instructor of Mechanical Engineering*
(B. Tech. (Mech.) Engr., M. Tech. (Thermal) Engr., Indian Inst. of Technology (Delhi); M.S.M.E., Van-derbildt University; M.B.A., University of Connecticut)

**Hai Khac Do** *Instructor of Electrical Engineering*
(Assoc. E.E., Waterbury State Tech. College; B.S.E.E., Bridgeport Engineering Institute; M.S.E.E., Rensselaer Poly. Institute) Test Engineer, General Data Comm Industries

**Alan Dubrow** *Professor and Chairman of Mechanical Engineering*
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**Leon Feigin** *Associate Professor of Mechanical Engineering*
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**Robert A. Fisch** *Senior Instructor of Electrical Engineering*
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**Pradeep Govil,** *Senior Instructor of Electrical Engineering*
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**Sarma Gullapalli** *Assistant Professor of Electrical Engineering*
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**Joseph Hajla** *Senior Staff Associate*
(A.S.M.E., B.S.M.E., Bridgeport Engineering Institute) Consulting Engineer

**Karen F. Hills** *Associate Professor*
(B.S., M.S., New Jersey Institute of Technology, Ph.D., New York University)

**Harvey Hoffman,** *Chairman, Electrical Engineering Department, and Professor*
(B.E.E., CCNY: M.E.E., E.E., NYU MSM, Hartford Graduate Center) Manager, Computer Products Design, Norden Systems

**Jay Hoffman** *Assistant Professor of Mechanical Engineering*
(B.A.E., M.M.E., New York University) Senior Staff Engineer, Textron Lycoming

**David H. Hunter** *Senior Instructor of Mechanical Engineering*
(B.S.M.E., M.M.E., Rensselaer Polytechnic Institute) Rotor Systems Engineer, Sikorsky Aircraft

**Joseph W. Ianniello** *Instructor of Information Systems Engineering*
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**Paul M. Ibsen** *Instructor of Computer Science*
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**Vedanth Kadambi** *Professor of Mechanical Engineering*
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**James Kalley** *Senior Instructor of Industrial Management*
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**Edward G. Keplinger** *Senior Instructor of Electrical Engineering*
(B.S.E.E., Bridgeport Engineering Institute) Senior Engineer, Pitney Bowes

**Vincent C. Konn** *Professor of Electrical Engineering*
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**Neil E. Krebs** *Professor*
(B.S.C.E., M.S.C.E., Ph.D., Rensselaer Polytechnic Institute) Adjunct Faculty, Hartford Graduate Center; University of Bridgeport; Bridgeport Engineering Institute; Consulting Engineer

**William M, Krummel** *Dean and Professor of Electrical Engineering*
(B.E.E., City College of New York; M.S., Columbia Unviersity; Ph.D., New York University) P.E. License—New York

**Robert L. Kugel** *Professor of Chemistry*
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**Walter J. Kulpa** *Asst. Professor of Mechanical Engineering*
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**Richard V. Kurczewski** *Vice Chairman and Assistant Professor of Manufacturing Engineering*
(B.E.E., Polytechnic Institute of Brooklyn; M.E.E., Stevens Institute of Technology) Research Systems Engineer, Philips Medical Systems N.A.

**Everett P. Loppacker** *Instructor of Mechanical Engineering*
(B.S.C.E., M.S.C.E., North Carolina University)

**Albert Madwed** *Chairman Manufacturing Engineering and Engineering Management Departments Associate Professor*
(B.S., M.S., Sc.D., Massachusetts Institute of Technology) President, A. Madwed Co.

**Nicholas A. Mastrocinque** *Senior Instructor of Engineering Graphics*
(B.S.M.E., M.S. CAD, State University of New York); CAT Manager, Sikorsky Aircraft

**William Medalis** *Instructor of Engineering Graphics*
(A.S., Pennsylvania State University; B.M.S.E., Bridgeport Engineering Institute) Quality Control Engineer, E.I. Dupont

**Raymond J. Metro** *Instructor of Computer Science*
(B.S., University of Bridgeport) Senior Instrumentation Development Engineer, Sikorsky Aircraft

**Peter M. Moanfeldt** *Professor of Mechanical Engineering*
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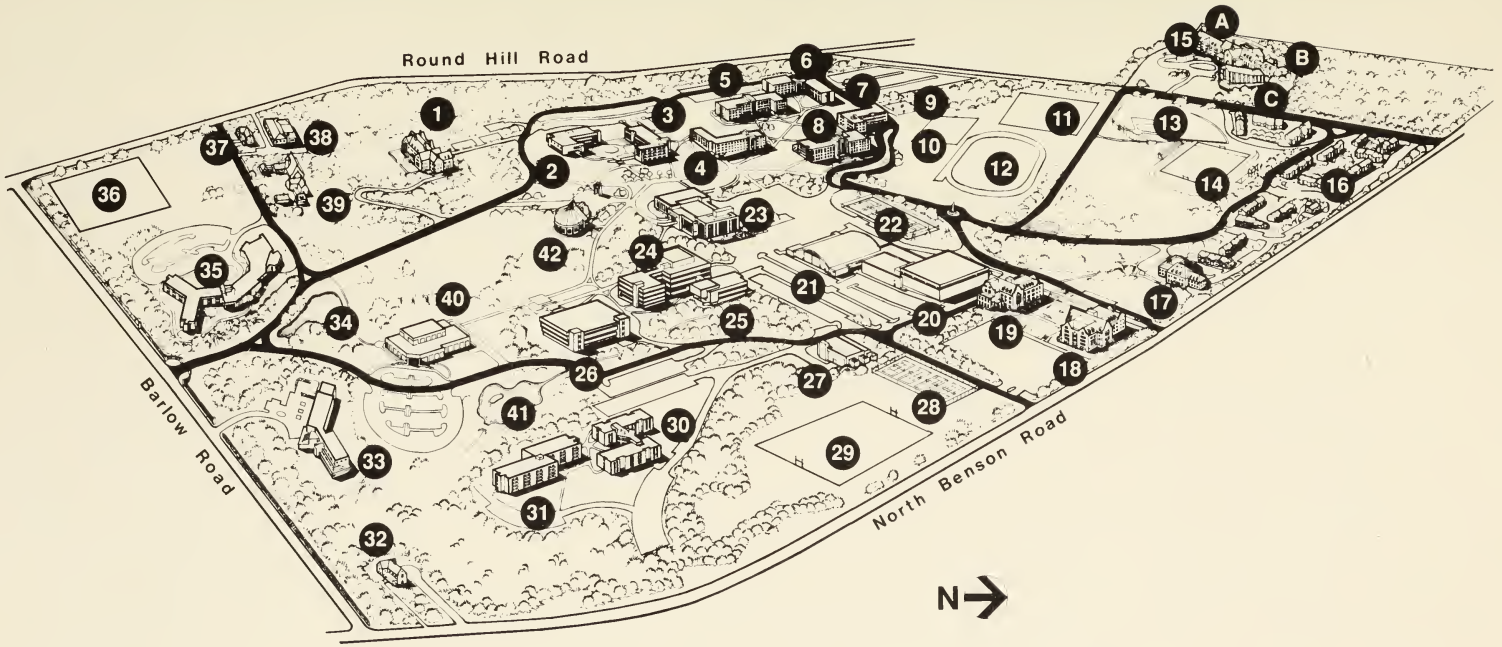
# Fairfield University Campus




1. Bellarmine Hall
2. Donnarumma Hall
3. Canisius Hall
4. Gonzaga Hall
5. Regis Hall
6. Jogues Hall
7. Campion Hall
8. Loyola Hall
9. Basketball Courts
10. Playing Field
11. Intramural Field
12. Varsity Field
13. Baseball Field
14. Alumni Field
15. Dolan Campus
    - A. John C. Dolan Hall
    - B. David J. Dolan House
    - C. Thomas F. Dolan Commons
16. Student Town House Complex
17. McAuliffe Hall
18. Xavier Hall
19. Berchmans Hall
20. Recreational Complex
21. Alumni Hall - Gymnasium
22. Tennis Courts
23. Barone Campus Center
24. Bannow Science Center
25. School of Nursing
26. Nyselius Library
27. Central Utility Facility
28. Tennis Courts
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40. Regina A. Quick Center for the Arts
41. Hopkins Pond
42. Egan Chapel of St. Ignatius
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- From New York or New Haven via Merritt Parkway (Rt.15). Take Exit 44, right onto Black Rock Turnpike; proceed 2 miles to Stillson Road (Rt. 135) and turn right. Bear left onto North Benson Road to the entrance.

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